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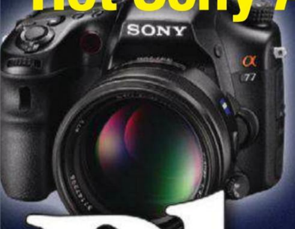

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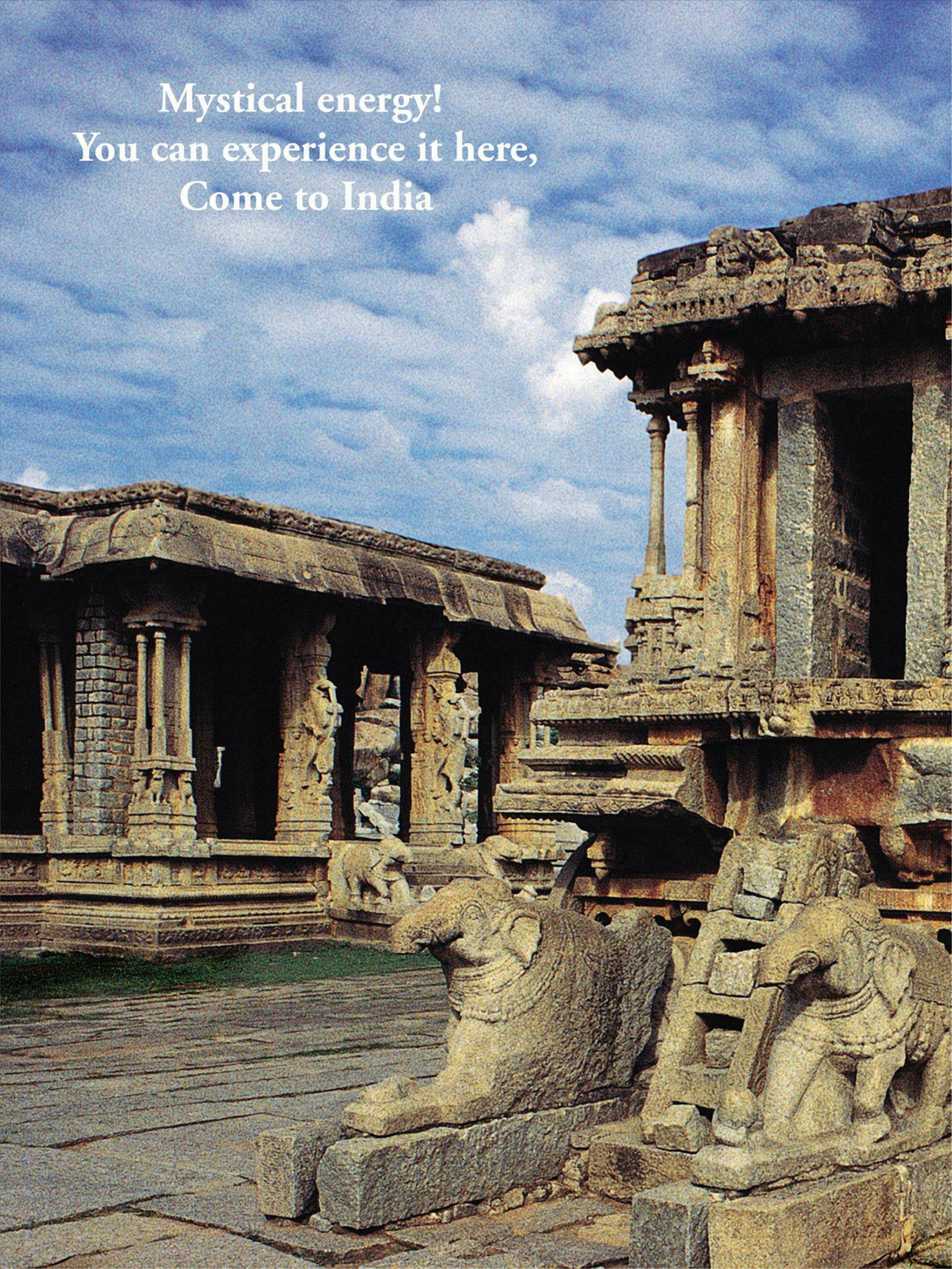
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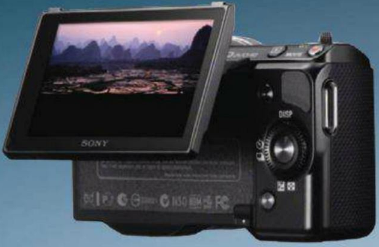

Tilting LCD

It's easy to get dramatic low-angle and macro images with the NEX-5N's tilting LCD monitor, which pulls away from the body and can tilt up 80° and down 45° for both low-angle and overhead shots. To autofocus on the subject, just touch it on the LCD screen.

OLED Tru-Finder

Nature photographers will appreciate the optional FDA-EV1S Tru-Finder to get eye-level viewing for both stills and video. This is especially useful for wildlife and sports telephoto photography with long lenses. The Tru-Finder features a 2,359,000-dot (XGA) OLED with a 3500:1 contrast ratio—much clearer than other LCD EVFs. The Tru-Finder tilts up to 90° for easy low-angle shooting and provides a 100° angle of view.

Compact Stereo Microphone

To capture all the sounds of nature while you're shooting HD video, you can attach the optional ECM-SST1 Compact Stereo Microphone to the NEX-5N. It provides more directional pickup than the built-in stereo mic and is less likely to pick up camera sounds. A supplied windscreen helps filter out hiss.

LA-EA2 Adapter

The remarkable new LA-EA2 adapter lets you mount Sony A-mount DSLR lenses on the NEX-5N. Not only does it greatly expand the range of focal lengths, but the LA-EA2 also contains a phase-detection AF system based on the one used in Sony's SLT translucent-mirror DSLRs. The adapter converts the NEX-5N into a phase-detect AF camera with all A-mount lenses in still or HD video shooting modes.

Flash

The camera comes with a detachable electronic flash unit. The ultra-low-profile flash folds down when you're not using it, and it extends up to take the picture. If you won't be needing flash at all, you can remove the unit, and the NEX-5N regains its sleek form.

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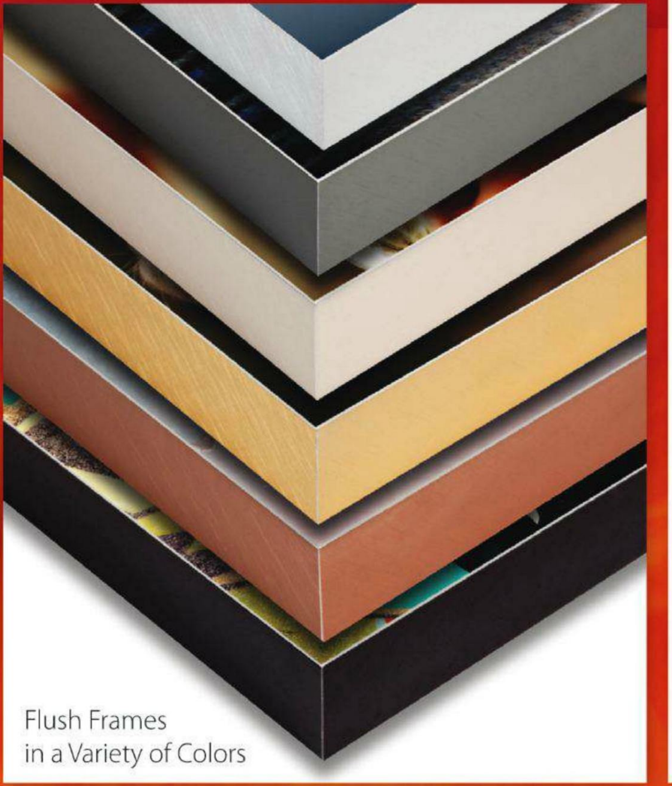

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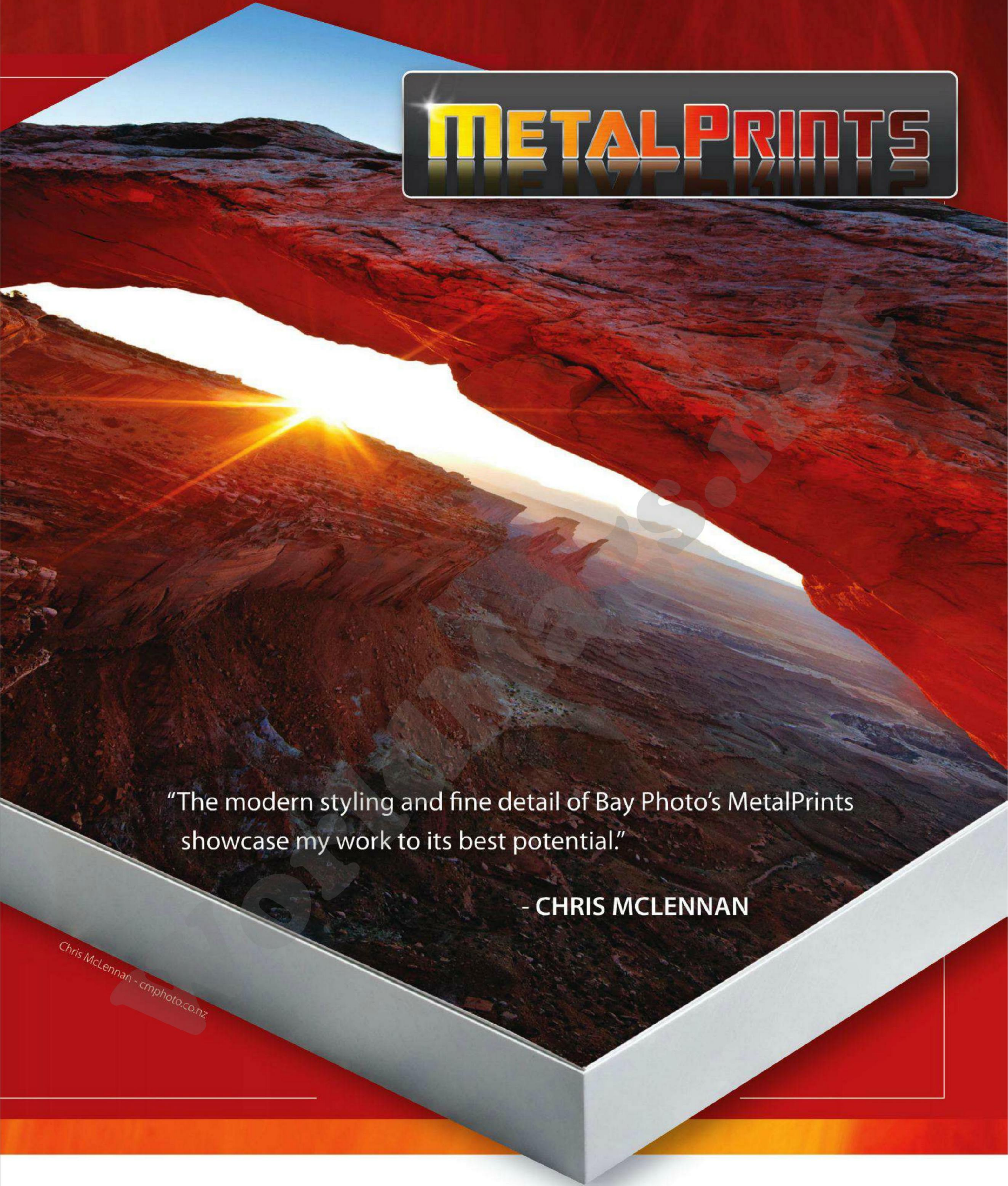

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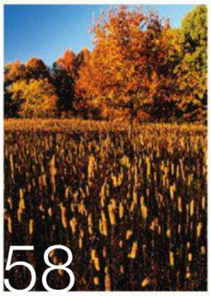

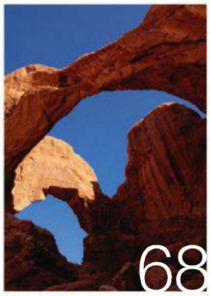

[FEATURES]

PORTFOLIOS

52 PEOPLE IN COLOR

Nevada Wier is the quintessential traveler and global adventurer. Among her recent destinations are the outer, less-known areas of Burma and India.

By ***Brian Davis***
Photography By ***Nevada Wier***

64 ASSIGNMENTS

Displaying some of the best from our online Assignments Galleries

OP & THE ENVIRONMENT

72 PHOTOGRAPHING WITH PURPOSE

By creating more meaningful work, you can find greater focus and develop a stronger voice, leading to deeper satisfaction and growth as a photographer

Text And Photography By ***Justin Black***

[HOW-TO]

58 LAND AND SKY

Tips for getting dramatic photos in the wide-open expanse of the American prairie

Text And Photography By ***Mike MacDonald***

68 THE DARK SECRET OF DIGITAL PHOTOGRAPHY

How the dark side of your photos can be limiting your prints

Text And Photography By ***Rob Sheppard***

78 RAW VS. JPEG

Should you be using one, the other or both?

82 WORKSHOP DIARY

A global photographer gives us a feel for the agenda and flow of a high-end workshop when he treks to China with Art Wolfe

Text And Photography By ***Mark Edward Harris***

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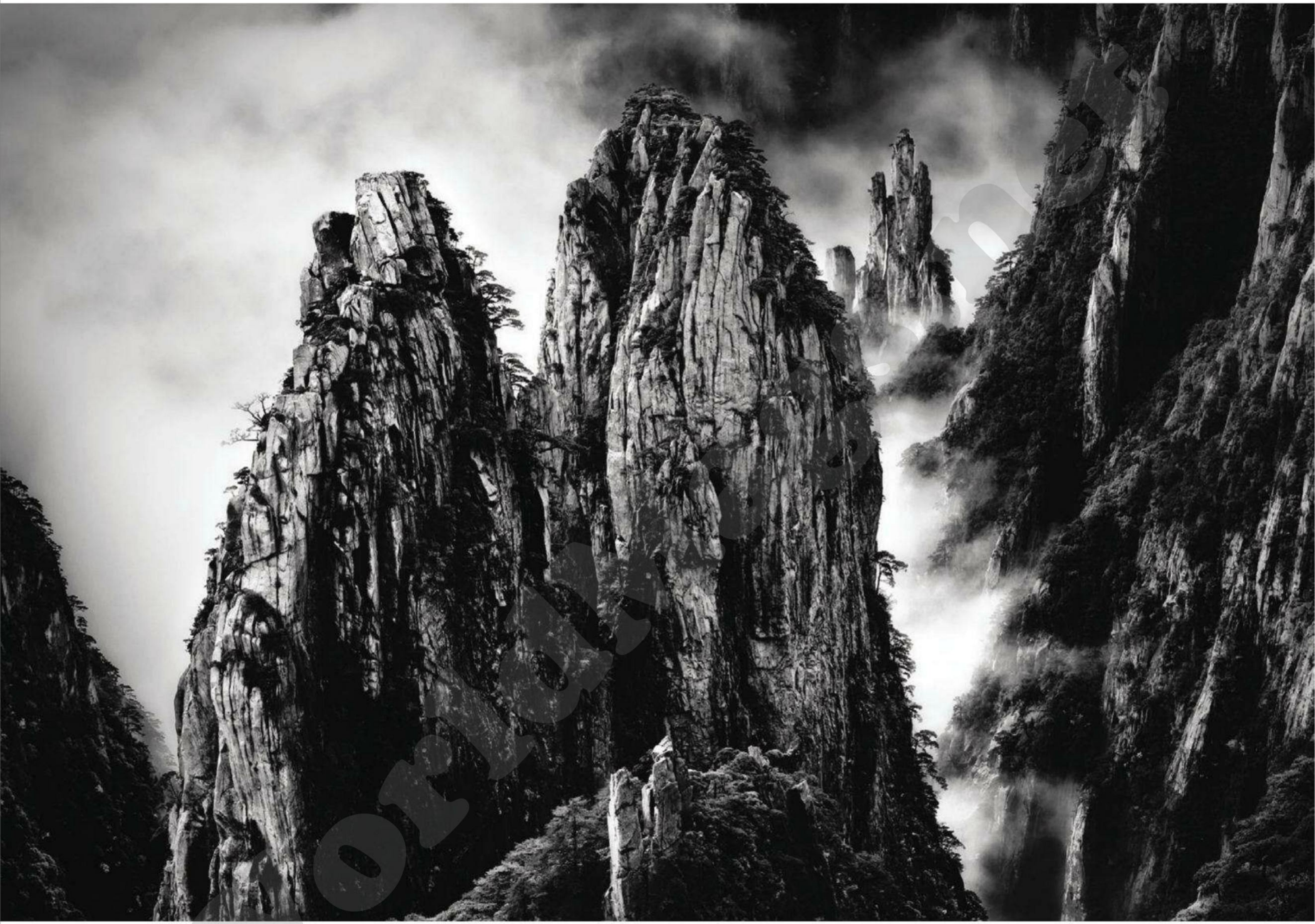
More On Next Page ▶

ART
WOLFE



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CONTENTS

Outdoor Photographer

[EQUIPMENT]

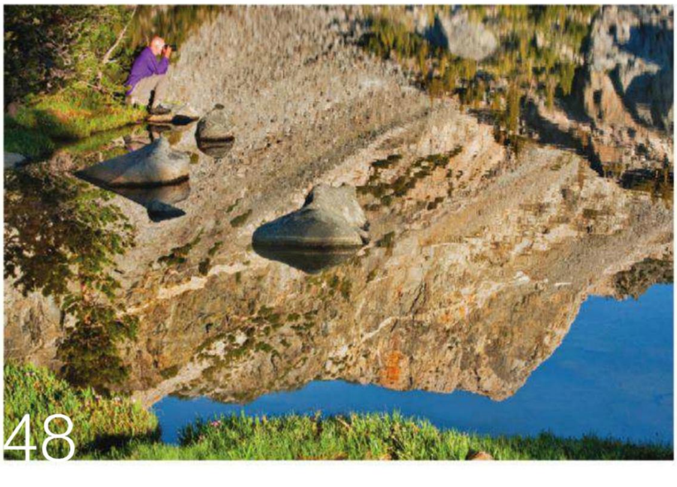
26 FIRST LOOK: SONY SLT-A77
The latest translucent-mirror DSLR from Sony has a 24.3-megapixel sensor, with continuous phase-detection AF and eye-level viewing for stills and video

86 OUR GUIDE TO MIRRORLESS CAMERAS
Combining compact size with the interchangeable lenses of a DSLR, mirrorless cameras offer the outdoor photographer a capable, lightweight option

90 GADGET BAG: TRAIL LIGHTS
Small flashlights have 1001 uses for an outdoor photographer in autumn

SOLUTIONS

94 ROLLING SHUTTER
How to cope with a CMOS issue



COLUMNS

38 Tech Tips:
Speed Up To Slow Down
By ***George Lepp***

44 Photo Adventure:
Playing In The Rain
By ***Bill Hatcher***

46 Fleeting Vistas:
Be An Outdoors Person
By ***Elizabeth Carmel***

48 World View:
Wilderness Reflections
By ***Frans Lanting***

DEPARTMENTS

18 In This Issue
20 Cover Shot
22 Showcase
28 In Focus
50 Favorite Places: Cascade Range, Washington
96 Travel & Workshops
102 OP Marketplace
130 Last Frame

▸ MORE On The Web

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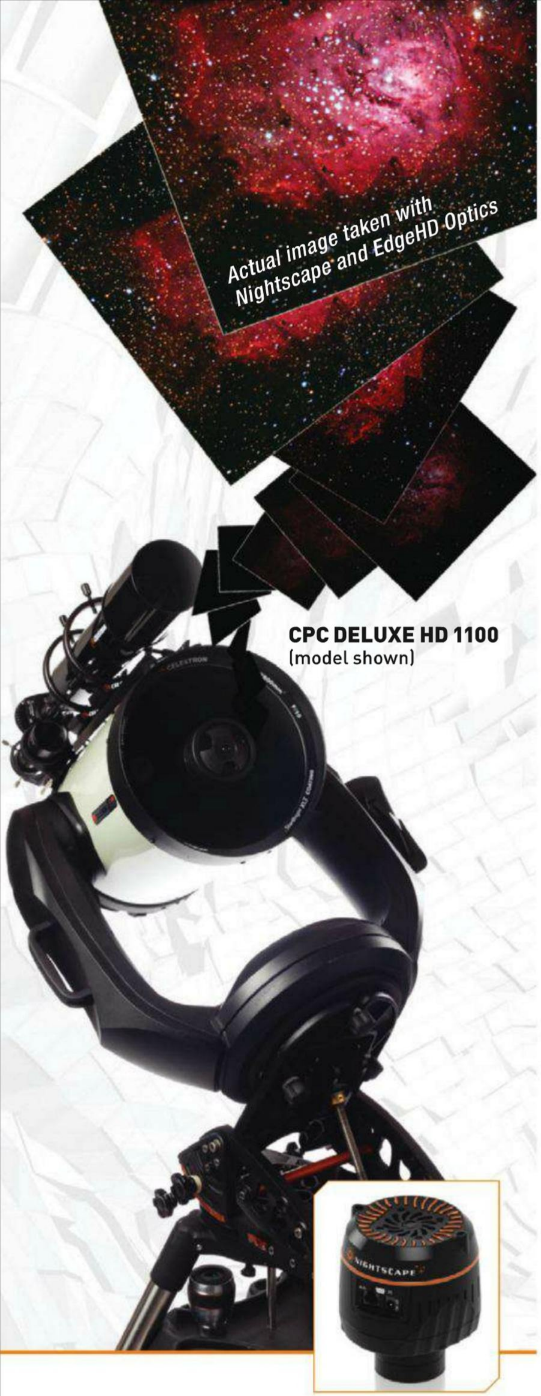

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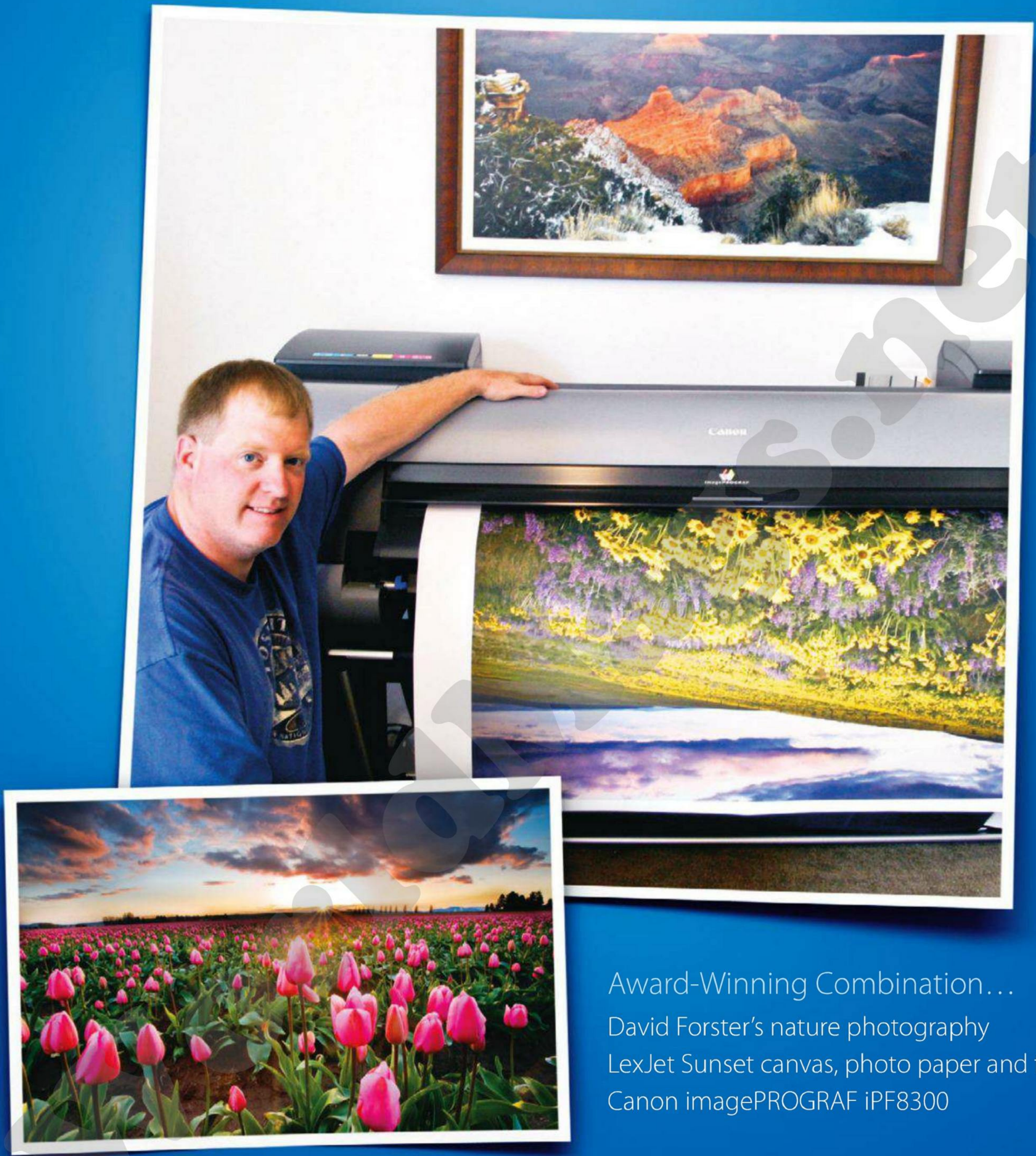

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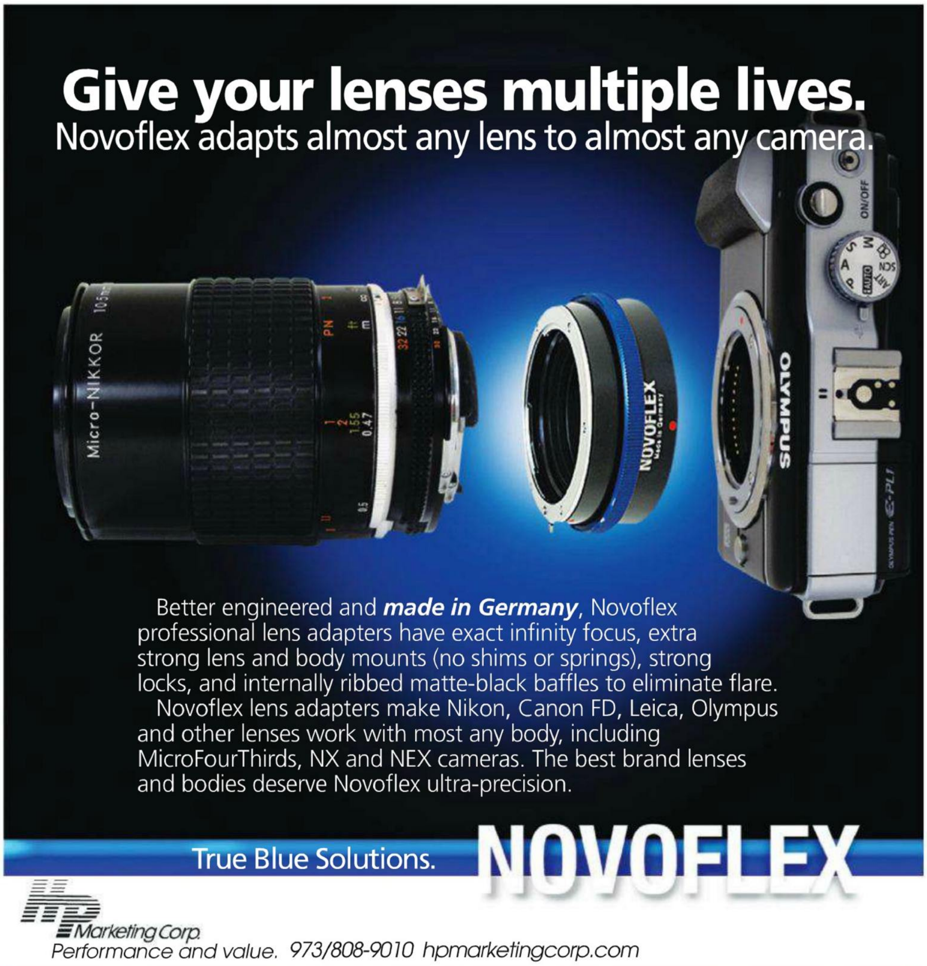

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Nevada Wier

One of Wier's latest projects took her to India where she has been photographing cultures that are in danger of being lost to modernity and the ever-shrinking world. The world got small fast, and there are few, if any, lonely places left. Wier's photography in these corners of the world doesn't capture quaint traditions as much as it shows people in transition.

One of the most interesting developments in the past couple of years has been the proliferation of mirrorless cameras. These are interchangeable-lens cameras that aren't classified as DSLRs because they don't have a mirror. And because there's no reflex, the cameras are much smaller than conventional DSLRs. Ever since the mirrorless cameras came out, we've been watching the category with great interest. Small, lightweight, APS-C sensors, a full array of lenses from wide-angle to telephoto, HD video—there's a lot of potential there. You don't get something for nothing in photography, though, and when it comes to the mirrorless cameras, the shortcoming was in the AF systems. The design of mirrorless cameras limits them to contrast-detect AF, which usually isn't as fast and accurate as phase-detect AF, particularly in low light. As with all technology, the contrast-detect AF systems are improving fast, and there's even a new lens adapter for Sony mirrorless models that gives you phase-detect AF. In this issue of *OP*, we take a look at the current line of mirrorless cameras and the key features for nature photographers. Check out "Our Guide To Mirrorless Cameras."

Nevada Wier hasn't been featured in *OP* for several years, but it's not for lack of trying. The problem has been that Wier seems to always be on the road, so after many attempts we finally were able to coordinate and put together an article. One of Wier's latest projects took her to India where she has been photographing cultures that are in danger of being lost to modernity and the ever-shrinking world. The world got small fast, and there are few, if any, lonely places left. Wier's photography in these corners of the world doesn't capture quaint traditions as much as it shows people in transition.

A few years ago there was a raging debate among photographers between shooting RAW or JPEG. It seemed that everyone had a strong opinion and there was no common ground. The proliferation of cameras that can shoot RAW + JPEG without a loss of performance has largely ended the debate. After all, you can shoot both simultaneously and use whichever one you want as the need arises. But even now there are good reasons to choose one or the other format. In "RAW vs. JPEG," we look at the pros and cons of each format and show examples of how each one works in different situations with different subjects.

Whichever format you shoot in, eventually you're going to want to make a print. A fine print is always the fullest expression of a well-made photograph. To get a good print, you need to pay attention to the dark areas in the frame. Dark areas can make an image pop or they can make the image seem dull and flat. See "The Dark Secret Of Digital Photography" to discover how you can adjust your photographs simply and easily to get them printer-ready.

It's hard to believe the holidays are almost here. Check out "In Focus: Holiday Gift Guide" for some great gift ideas for any nature photographer on your list. Or, if you're the nature photographer on someone else's list, be sure to leave this copy of the magazine someplace where they will be sure to find it.

Recently, I put together a few surveys asking *OP* readers about gear and favorite subjects. Moving forward, I invite you to drop me an email at editors@outdoorphotographer.com with ideas for future articles. Let me know your questions and how *OP* can help you become a better photographer. I can't respond to every email, but I read them all, and I'd like to know your suggestions.

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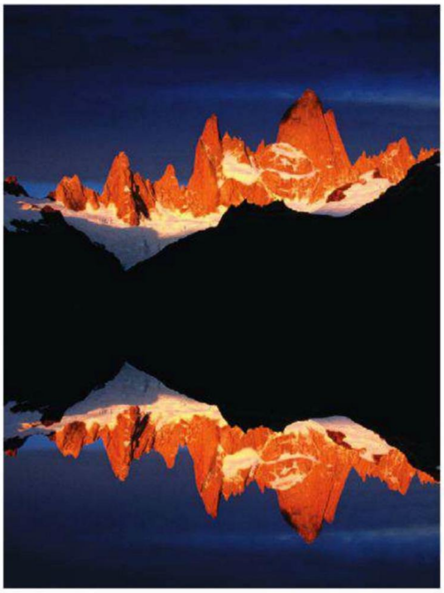
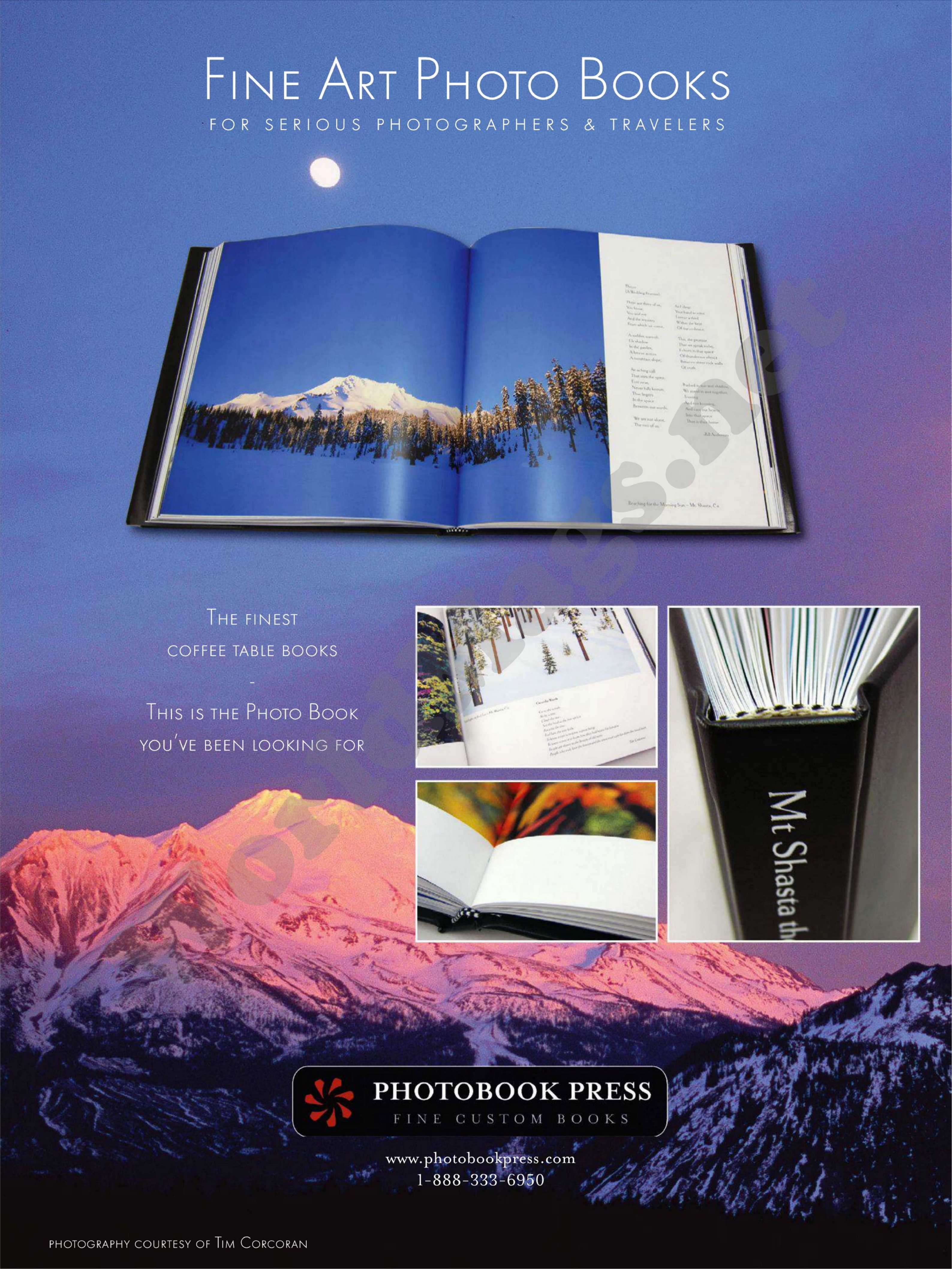


Photographer: Art Wolfe
Location: Fitz Roy, Los Glaciares National Park, Argentina
Situation: The dramatic landscapes of Patagonia are on every nature photographer's short list of destinations. The rugged mountains endure, and despite a significant increase in tourism, the region still offers some of the more pristine vistas in the world. One of the reasons for the increase in tourism is because Patagonia is so much more accessible than it was just 15 years ago. International flights can bring you within easy range of the soaring peaks and azure lakes for which Patagonia is famous.

Art Wolfe's image of the Fitz Roy Massif is remarkable. The sun rising to illuminate the peaks and bring them to life against the dark sky combined with the reflection in the foreground lake creates a dramatic double image of the scene. Between the vivid landscape and the negative space, it's one of the most graphic photographs we've seen.

As the world gets smaller and more photographers can get to places like this, we're reminded that being in the right place is only half of the battle. Being in a special place at just the right time is the other half. The famous saying "*f*/8 and be there!" sums it up. Wolfe was in exactly the right place at exactly the right time. It wasn't luck; it was Wolfe's artistic eye and his awareness of how the colors and the light would render as a photograph that make this image so great. See "Workshop Diary" in this issue to get a sense of how Wolfe approaches landscapes and people as a global adventurer and photographer.


Reaching for the Morning Sun – Mt. Shasta, Ca
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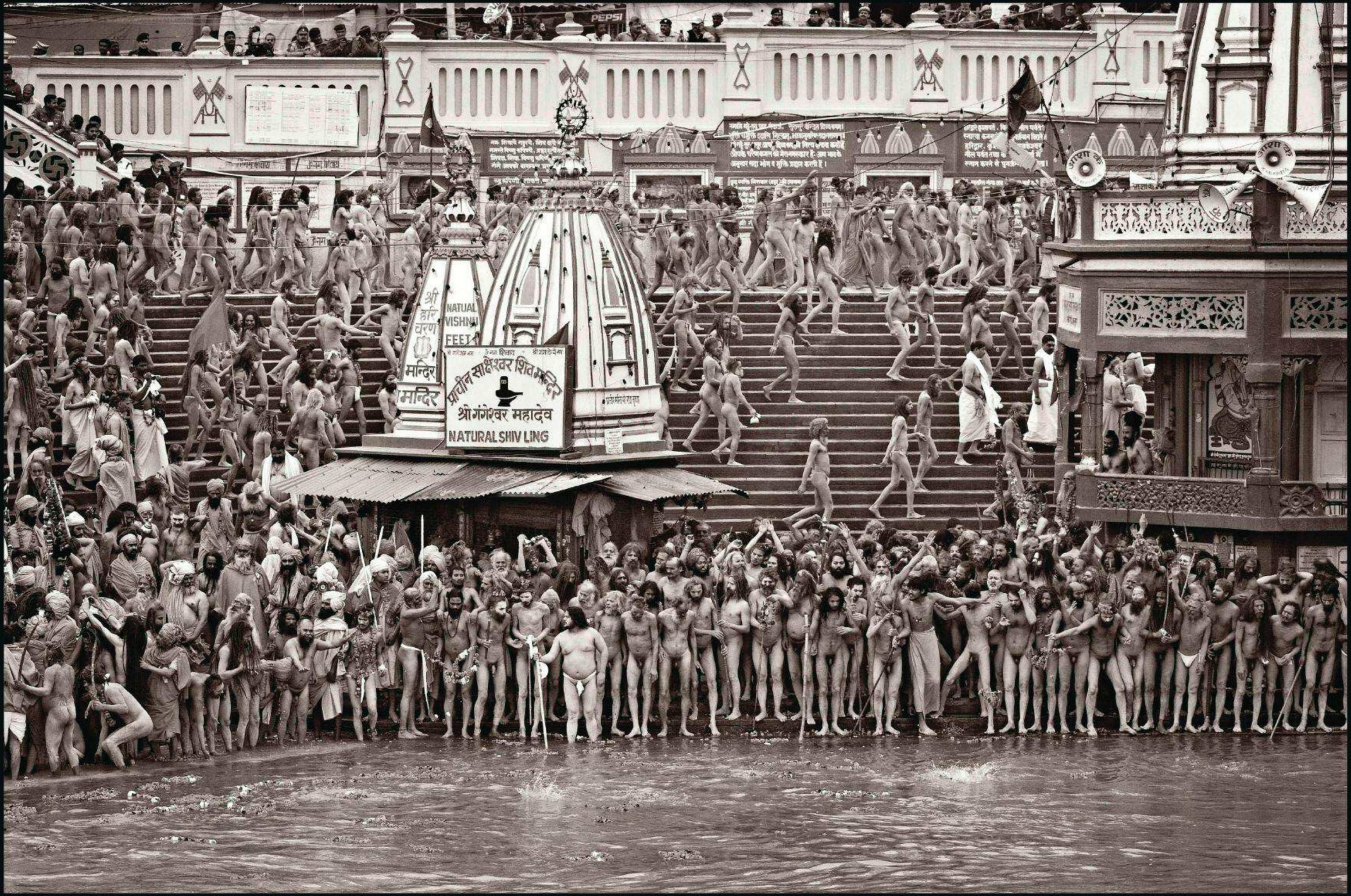
SHOW CASE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मन्दिर
प्राचीन साक्षेश्वर शिवमन्दिर
श्री गंगेश्वर महादेव
NATURAL SHIV LING

Abhishek Hajela

Sacred India By Abhishek Hajela

This award-winning photograph is called "Just before the sacred dip in the Ganges," and it shows Abhishek Hajela's interest in religious festivals and gatherings in India. Earlier this year, Hajela's project, Spiritual India: The Naga Sadhus-Naked Saints, was nominated by the National Geographic All Roads Photography Program.

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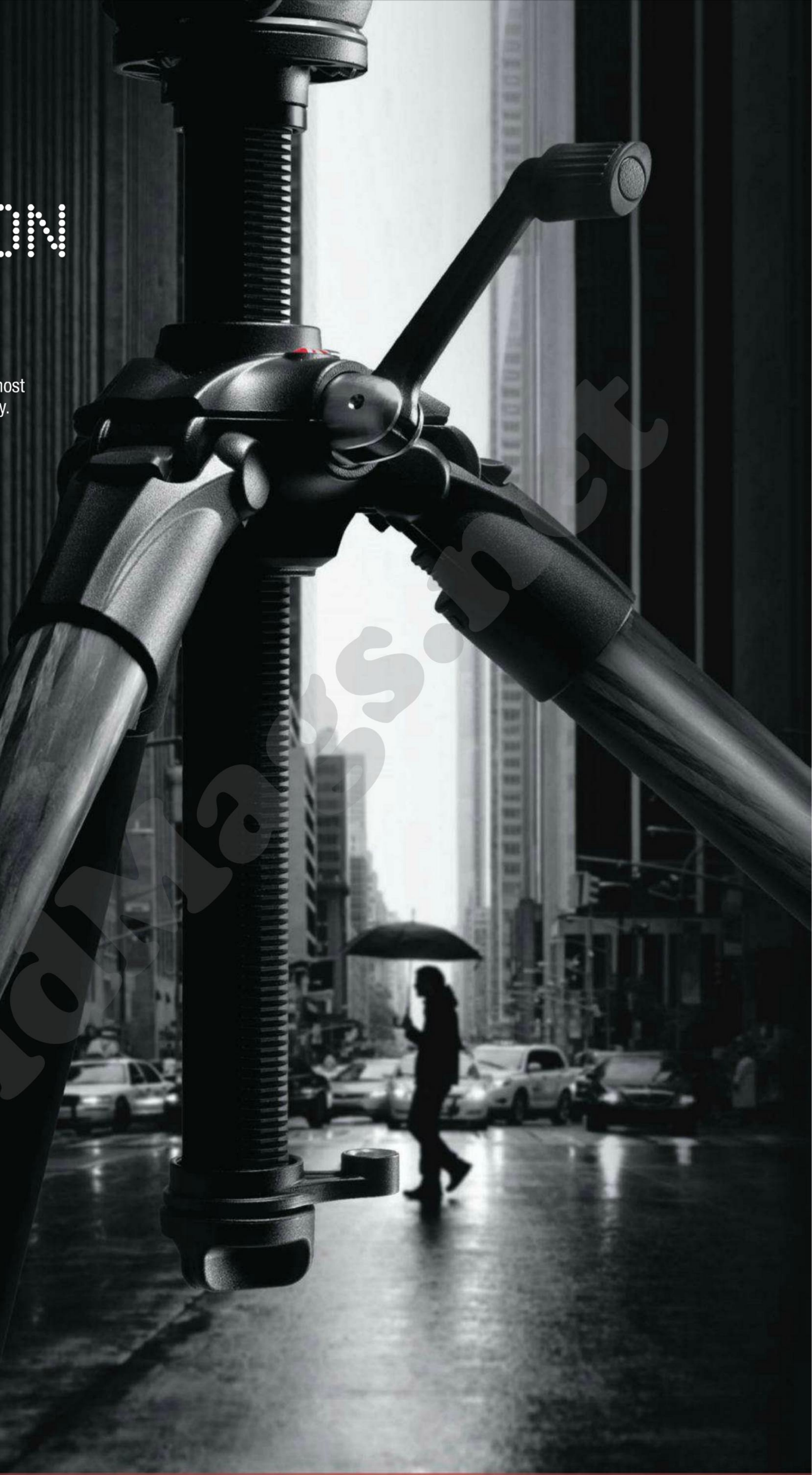

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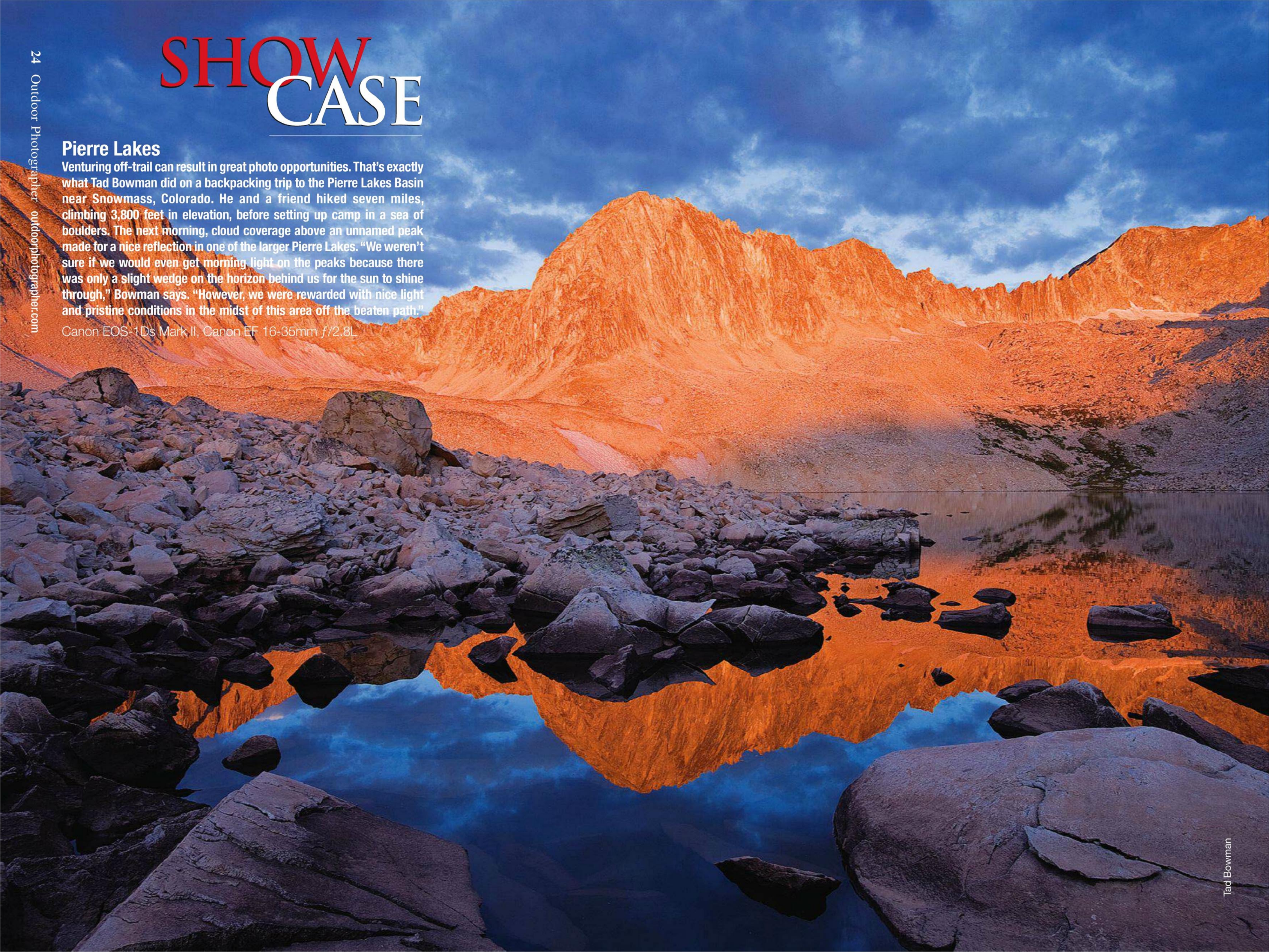
SHOW CASE

Pierre Lakes

Venturing off-trail can result in great photo opportunities. That's exactly what Tad Bowman did on a backpacking trip to the Pierre Lakes Basin near Snowmass, Colorado. He and a friend hiked seven miles, climbing 3,800 feet in elevation, before setting up camp in a sea of boulders. The next morning, cloud coverage above an unnamed peak made for a nice reflection in one of the larger Pierre Lakes. "We weren't sure if we would even get morning light on the peaks because there was only a slight wedge on the horizon behind us for the sun to shine through," Bowman says. "However, we were rewarded with nice light and pristine conditions in the midst of this area off the beaten path."

Canon EOS-1Ds Mark II, Canon EF 16-35mm *f*/2.8L



Tad Bowman

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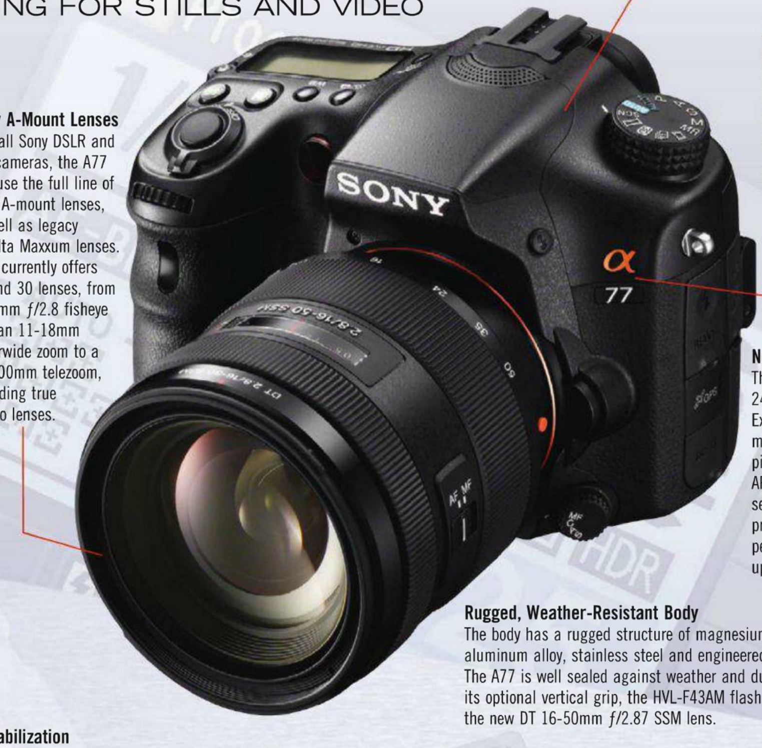
FIRST LOOK Sony SLT-A77

THE LATEST TRANSLUCENT-MIRROR DSLR FROM SONY HAS A 24.3-MEGAPIXEL SENSOR, WITH CONTINUOUS PHASE-DETECTION AF AND EYE-LEVEL VIEWING FOR STILLS AND VIDEO

The new **SLT-A77** is the long-awaited successor to Sony's A700 enthusiast APS-C DSLR. In 2010, Sony introduced the first cameras with TMT (translucent mirror technology), the entry-level SLT-A55 and SLT-A33. A DSLR with a TMT system has a fixed mirror that transmits most of the light to the image sensor while simultaneously directing a portion of the light to the camera's phase-detection AF sensor. Conventional DSLRs must alternate focusing and exposing, since the SLR mirror must be down for the former and up for the latter. TMT allows the camera to continuously autofocus and calculate exposure at the same time. This speeds up operation, minimizes moving parts and provides continuous quick phase-detection autofocusing for still and HD video shooting.



Built-In GPS
A built-in GPS makes it easy to geotag your shots, no extra equipment needed.

12 fps At Full Resolution
The A77 can shoot its 24.3-megapixel images at 12 fps, with continuous phase-detection AF for each shot—great news for wildlife and sports-action shooters, in particular.

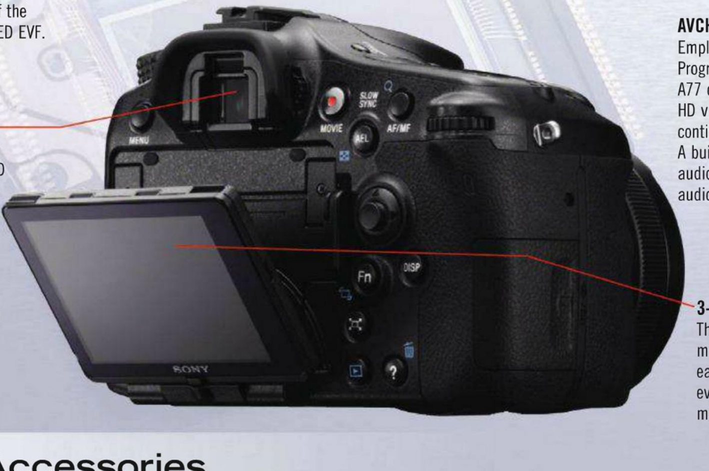
Sony A-Mount Lenses
Like all Sony DSLR and SLT cameras, the A77 can use the full line of Sony A-mount lenses, as well as legacy Minolta Maxxum lenses. Sony currently offers around 30 lenses, from a 16mm ƒ/2.8 fisheye and an 11-18mm superwide zoom to a 70-400mm telezoom, including true macro lenses.

New 24.3 MP APS-C Sensor
The A77 features a new 24.3-megapixel APS-C Sony Exmor HD CMOS sensor—24.3 megapixels is a third more pixels than any previous APS-C sensor. The new sensor and BIONZ processer provide improved low-light performance, with ISO settings up to 16,000.

Rugged, Weather-Resistant Body
The body has a rugged structure of magnesium alloy, aluminum alloy, stainless steel and engineered plastic. The A77 is well sealed against weather and dust, as are its optional vertical grip, the HVL-F43AM flash unit and the new DT 16-50mm ƒ/2.87 SSM lens.

SteadyShot INSIDE Stabilization
When you can't use a tripod, Sony's SteadyShot INSIDE sensor-shift image stabilization helps produce sharper handheld images. Since it works by moving the image sensor itself rather than lens elements, you get stabilization with any lens you attach to the camera. And unlike the sensor-shift DSLRs, the A77 lets you see the effects of the stabilization, thanks to its OLED EVF.

Image Enhancers
Like other recent Sony DSLRs and TMT cameras, the A77 features Multi-Frame NR (the camera quickly shoots, then composites six images to reduce noise), Auto HDR (the camera shoots and combines the best of three bracketed images to extend detail from shadow through highlight) and Dynamic Range Optimizer (recovers shadow details while avoiding blowing out highlights in a single shot). Sweep Panorama mode makes it easy to create stitched panoramic images in-camera, handheld—even in 3D.



New XGA OLED Viewfinder
A key feature of the A77 is its new 2,359,296-dot (XGA) OLED electronic viewfinder, which offers much better resolution, contrast and response than the LCD-based EVFs, and provides convenient eye-level viewing for still and video shooting. The OLED finder can display exposure details, as well as preview effects of camera settings.

AVCHD Progressive Video
Employing the new AVCHD Progressive v2.0 standard, the A77 can shoot 1920x1080 full HD video at 60p (and 24p), with continuous phase-detection AF. A built-in stereo microphone and audio noise reduction enhance audio quality.

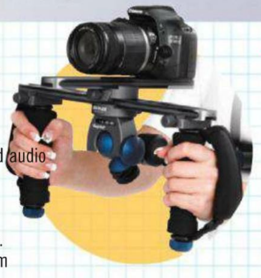
3-Way Tilting LCD Monitor
The 3.0-inch, 921,000-dot LCD monitor tilts and swivels for easy shooting at any angle—even when the camera is mounted on a tripod.

SPECIFICATIONS

Image Sensor:
24.3-megapixel (effective)
Exmor APS HD CMOS (APS-C size)
Lens Mount: Sony A-mount
Image Stabilization:
Sensor-shift, Super SteadyShot
LCD Monitor:
3.0-inch, 921,600-dot TFT
Viewfinder: 1.3cm XGA OLED
Video:
1920x1080/60p and 24p, 24 Mb/s;
MP4 1440x1080/30p, 12 Mb/s;
640x480/30p, 3 Mb/s
AF System:
19-point, 11 cross-type
Shutter Speeds:
1⁄8000 to 30 sec., X-sync up to 1⁄250 sec.
Flash:
Built-in auto pop-up, GN 12 (meters, ISO 100); wireless control
ISO Settings:
100-16,000, ISO 50
Continuous Firing Mode: 12 fps
Metering:
1200-zone evaluative, CW, spot
Storage Medium:
SD, SDHC, SDXC, MS PRO Duo, MS PRO-HG Duo
Recording Format:
JPEG, RAW, RAW + JPEG
Dimensions:
5.6x4.1x3.2 inches (body)
Weight: 23.0 ounces
Estimated Street Price: $1,399
Contact:
Sony, www.sonystyle.com

▼ Essential Accessories

< Microphone
An accessory shotgun microphone kit like the new Que Audio Sniper Kit gives you dramatically improved audio quality and much more control over sound capture than the built-in DSLR mic. www.queaudiousa.com



< Steadying Device
The Novoflex MMR Bluebird gives you a balanced, handheld platform for shooting action stills or video. A handheld device like this enhances the A77's built-in SteadyShot technology. www.hpmarketingcorp.com

Light Control >
The Rogue FlashBender system easily fits into your camera bag, weighs very little and turns your accessory flash into an incredibly useful outdoor device. www.expoimaging.com

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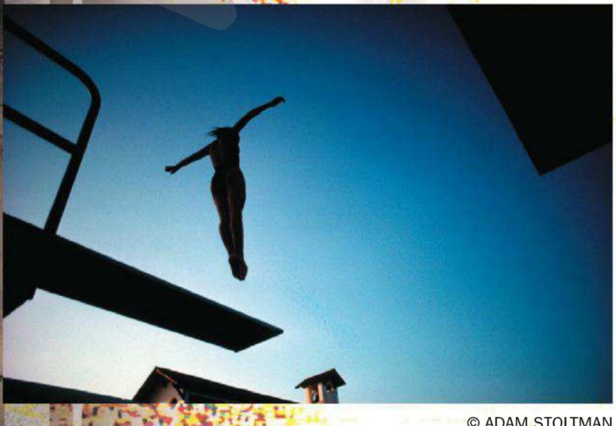

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NEX-GEN CAMCORDER ►

With a bigger sensor, stronger audio capabilities and AVCHD 2.0 HD video support, the **Sony NEX-VG20** is the second generation of Sony's Handycam interchangeable-lens camcorder. The 16.1-megapixel Exmor APS HD CMOS sensor is roughly 20 times the surface area of that found in a conventional camcorder. It captures in 1080 at up to 24 MB/s with 24p, 30p and 60p frame rate options. Other additions include RAW still capability, a faster autofocus system, focus assist and your choice of 2ch stereo or 5.1-channel surround-sound audio. The VG20 is compatible with the Sony E-mount series of lenses. List Price: $1,599 (body only); $2,199 (with E 18-200mm F3.5-6.3 OSS lens). **Contact:** Sony, (877) 865-7669, www.sonystyle.com.

SONY
HANDYCAM
E-mount

FUJINON ASPHERICAL LENS
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DSLR BACKUP ▲

With extensive manual controls, built-in lens filters and a large DSLR-sized sensor, the **Fujifilm FinePix X100** is a worthy alternative when you don't want to carry a bulky camera. A 12.3-megapixel sensor and a fast 35mm-equivalent ƒ/2 Fujinon lens let you take top-notch quality pictures at fast shutter speeds with a shallow depth of field. The retro-looking camera delivers a classic rangefinder-like shooting experience with traditional controls. Turning a ring at the rear of the lens barrel sets aperture, and a dial on top of the camera controls shutter speed. The X100 captures 720p HD video at 24 fps and has a hybrid optical and electronic viewfinder. Estimated Street Price: $1,200. **Contact:** Fujifilm, (800) 800-3854, www.fujifilmusa.com.

PERSPECTIVE CONTROL ▼

Make photographs with greater depth of field using the **Schneider Optics PC-TS lens family**. Known for their fine precision, Schneider Super Angulon lenses are legendary among pro photographers. This new lineup includes three models: the **Super Angulon ƒ/2.8 50mm** and **Makro-Symmar ƒ/4.0 90mm PC-TS for DSLRs** and **Apo-Digitar ƒ/5.6 120mm HM Aspheric for medium format**. The lenses can shift laterally up to 12mm or tilt at an angle of up to 8º, which is enough movement to correct almost any scene or create just about any effect desired. These movements can be applied in 30º increments at any position within the 360º lens rotation. This is possible because of their large 90mm image circle (120º for the medium format). Estimated Street Price: $4,192 (50mm); $3,962 (90mm); $5,657 (120mm). **Contact:** Schneider Optics, (818) 766-3715, www.schneideroptics.com.

PC-TS MAKRO-SYMMAR 4/90 HM
SUPER-ANGULON

CANON FISHEYE ZOOM LENS EF 8-15mm 1:4 L USM
Canon
8-15mm
ULTRASONIC

◄ FISHEYE GLASS

Change up the look of your landscapes by taking an exceptionally wide angle of view with the **Canon EF 8-15mm ƒ/4L Fisheye USM lens**, which delivers a 180º diagonal angle of view for all EOS SLRs. Features include UD glass for limiting chromatic aberration, a Subwavelength coating for reduced ghosting and a newly developed Fluorine coating that minimizes soiling, smears and fingerprints. The lens has full-time manual focus for instantly switching from AF to manual operation. Estimated Street Price: $1,399. **Contact:** Canon, (800) OK-CANON, www.usa.canon.com.

EVEN MOTION ►

Take higher-quality video clips on your DSLR with help from the **Cine DSLR fluid head** from **Sachtler**. The head's camera plate features an anti-twist retainer, which is part of what makes the unit so well suited for DSLRs. With a load capacity of up to 11 pounds, it can support heavier cameras and lenses. Other features include a 10-step counterbalance system, three vertical and three horizontal grades of drag for precise panning, and a tilt range of +90º to -75º. Estimated Street Price: $1,030. **Contact:** Sachtler, (845) 268-0100, www.sachtler.us.

MACRO LENS ►

The **Sigma 105mm F/2.8 EX DG OS HSM Macro** has a 1:1 reproduction ratio down to its closest working distance of 12.3 inches and incorporates Sigma's Optical Stabilizer technology for preventing motion blur from shaky hands. The Super Multi-Layer Coating reduces flare and ghosting, resulting in images with high contrast, and the Hyper Sonic Motor (HSM) ensures quiet autofocus. List Price: $1,400. **Contact:** Sigma, (800) 896-6858, www.sigmaphoto.com.

SIGMA
105mm 1:2.8 DG MACRO HSM
OPTICAL STABILIZER

PRECISE PANNING ▼

Get your camera into the exact position you want using the innovative **Arca-Swiss d4** and **d4m pan-tilt heads**. A turning device at the base of both models aligns the camera, and there's a panning device under the camera mount for shooting panoramas. Two bubble levels that sit at a 90º angle are under the panning device as well for aligning the camera. The d4 can be controlled manually or with micrometers while the d4m is manual only. The d4 and d4m weigh 1.7 and 1.4 pounds, respectively. Estimated Street Price: $1,102 (d4); $711 (d4m). **Contact:** Arca-Swiss International, P.O. Box 28450, Tempe, AZ 85285, (480) 755-3364, www.precisioncameraworks.com.

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Polar bear trips are **Natural Habitat**'s specialty. Their adventures run from Churchill, Manitoba, and offer a glimpse of polar bears as they wait for the Hudson Bay to freeze over. **The Classic Polar Bear Photo Adventure** includes three full days on the tundra at the edge of the bay, where the bears tend to gather. Polar Rovers take you deep into bear habitat where you have plenty of room to get the right shots. An expert photographer guide provides assistance, and evening lectures cover how best to photograph Arctic wildlife. Groups are limited to 15 travelers. Check the website for fees and dates. **Contact:** Natural Habitat, www.nathab.com.

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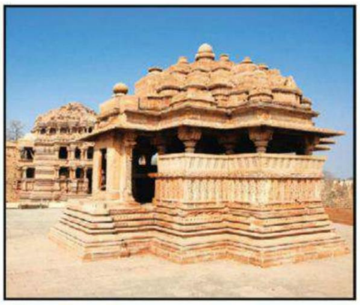

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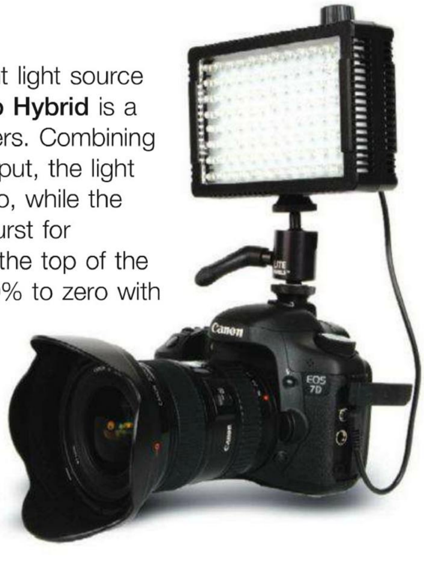
◄ VERSATILE PACK

Crafted with a two-in-one design, the **Tamrac Evolution 9** can be worn as a backpack or as a sling pack that fits over your right or left shoulder. Your camera is accessible through doors on each side of the pack when worn over either shoulder. There's also a front panel that provides access to your camera when the pack is removed. With plenty of room, the main compartment holds a DSLR with grip and up to an 8¾-inch lens attached, as well as several more lenses, a flash and up to a 17.3-inch laptop, which fits in the rear pocket. Also included are a clip for holding a tripod and a removable rain cover. Estimated Street Price: $259. **Contact:** Tamrac, (800) 662-0717, www.tamrac.com.

HYBRID LIGHT ►

For adding fill light to stills or as a constant light source for video, the flexible **Litepanels MicroPro Hybrid** is a must-have accessory for HD DSLR shooters. Combining flash functionality with continuous-light output, the light provides soft, wraparound lighting for video, while the Flash setting produces a 400% brighter burst for illuminating stills. An integrated dimmer at the top of the housing delivers instant dimming from 100% to zero with minimal color shift. The unit generates 1.5 hours of continuous output using six AA batteries or five to six hours using Energizer e2 Lithium cells. Estimated Street Price: $475. **Contact:** Litepanels, (818) 752-7009, www.litepanels.com.



◄ CLOSE RANGE

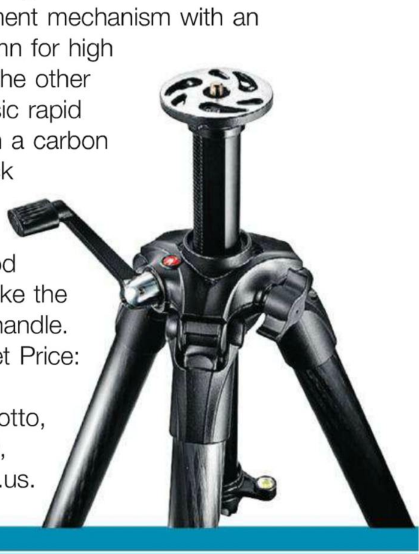
For capturing nature's details, the **Nikon AF-S DX Micro-NIKKOR 40mm ƒ/2.8G** produces a 1:1 reproduction ratio, focuses as close as 6.4 inches and has the same effective angle of view as a 60mm lens on a full-frame camera. With Nikon's Close-Range Correction System, the lens elements are configured in a "floating" design that causes each lens group to move independently for achieving critical focus at close distances. You can quickly switch between manual-priority autofocus and manual-focus modes. Estimated Street Price: $279. **Contact:** Nikon, (800) NIKON-US, www.nikonusa.com.

ALL-IN-ONE ZOOM ▲

When there's only room for one lens, make sure to take one that has you covered from all angles. With a versatile 15:1 zoom ratio, the **Tamron 18-270mm F/3.5-6.3 Di II VC PZD** takes your APS-C-format D-SLR from true wide-angle (equivalent to 28mm on a 35mm camera) to supertelephoto territory (about 419mm equivalent). The VC stands for Vibration Compensation, which means you can use all those focal lengths when shooting handheld, and the PZD (Piezo Drive) mechanism provides fast, quiet autofocus. The stabilizer is in the lens so it steadies the viewfinder image, as well as the recorded one. The lens focuses down to 19.3 inches at all focal lengths, further extending its versatility. It's available for Canon, Nikon and Sony (the latter without VC since stabilization is in the camera body). Estimated Street Price: $649. **Contact:** Tamron USA, (631) 858-8400, www.tamron-usa.com.

SOLID SUPPORT ▼

Steady your shot using the **Manfrotto Pro Tripod 057 series**. The lineup includes three models that range in load capacity from 26.5 to 39.7 pounds, with a maximum height of nearly 80 inches and different configuration options for meeting your specific needs. Two sizes of leg extensions are available at 52 inches and 71 inches, and there are two different column types. One model has a gradual adjustment mechanism with an aluminum column for high precision, and the other features a classic rapid adjustment with a carbon column for quick changes. An innovative design and good ergonomics make the tripod easy to handle. Estimated Street Price: $751 to $912. **Contact:** Manfrotto, (201) 818-9500, www.manfrotto.us.



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Earthmate
PN-60w
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◄ STAY CONNECTED

Keeping the **DeLorme Earthmate PN-60w GPS with SPOT Satellite Communicator** on hand means you not only have a GPS trail map, but also a satellite transmitter that can send out messages (up to 40 characters) for keeping in contact with friends, family and emergency services, from locations around the world. If you go out of cell phone range, you can still send messages to cell phones, email addresses and social-networking sites, such as Facebook and Twitter, from the most remote places. Your position is pinpointed on included DeLorme Topo North America GPS maps. Estimated Street Price: Starts at $449. **Contact:** DeLorme, (800) 561-5105, www.delorme.com.

PRINTMAKER ►

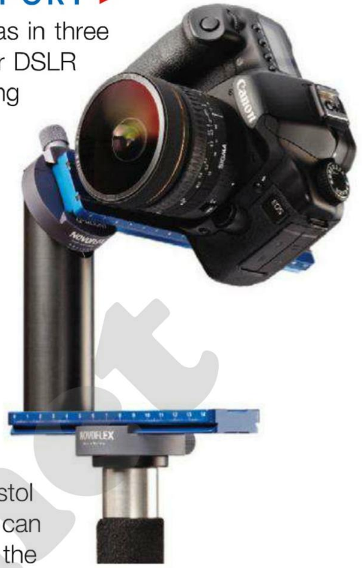
Nothing beats seeing the fine details and bold colors you photographed out on the trail in print. Take your images from screen to print using the 13-inch **Epson Photo Stylus R3000**, which uses the same UltraChrome K3 with Vivid Magenta ink system found in the R2880 and R3880. Unlike those printers, the R3000 automatically switches between Photo and Matte black inks to produce deep blacks and rich color on glossy, matte or fine-art media. Other features include an eight-channel MicroPiezo AMC Print Head that produces smaller ink droplet sizes for more precision and an advanced Black-and-White Photo Mode. Connectivity options include Hi-Speed USB 2.0, Ethernet and Wireless-N. Estimated Street Price: $849. **Contact:** Epson, (800) GO-EPSON, www.epson.com.

LIGHT FILTER ▼

Saturate those bright blue skies by attaching the **Kenko Zeta EX circular polarizer** to the front of your lens. The filter transmits 25% more light, which is about a half-stop more than standard circular polarizers. Built with a thin frame and a four-layer glass element that's just 0.8mm thick, the Zeta EX weighs only 0.3 ounces. ZR (Zero Reflection) Super Multi Coating prevents interference with any color or light transmission. Light can enter the filter from any angle, eliminating reflections. Nano Glass Technology delivers stain- and scratch-resistance. The filter is compatible with wide-angle lenses and has a front screw-on function for attaching a lens cap. Estimated Street Price: $249 (77mm). **Contact:** Kenko (THK Photo), (800) 421-1141, www.thkphoto.com.

Kenko Zeta Wideband C-PL (W) 72 mm Made in Japan

PANNING SUPPORT ►



Create 360° panoramas in three or four shots with your DSLR and a fisheye lens using the **Novoflex VR-SLANT**. It's comprised of two Novoflex Arca-compatible Q Mount quick-release mounts, a pistol grip and two calibrated Arca-compatible quick-release plates for accurate positioning of the nodal point when required. The pistol grip's upper Q Mount can be adjusted 15° to tilt the camera up or down for more or less of the horizon. The upper mount is angled at 60° so when the camera is mounted to it, the diagonal of the image sensor will be vertical to the image. Estimated Street Price: $426. **Contact:** HP Marketing Corp., (800) 735-4373, www.hpmarketingcorp.com.

SLIM SHOOTER ▲

With a simplified design and control setup, the **Panasonic Lumix DMC-GF3** measures just 4.2x2.6x1.3 inches and weighs less than 8 ounces (without lens and battery). The 12-megapixel, interchangeable-lens camera features a 3-inch LCD with touch-to-focus functionality, a fast and accurate autofocus system that locks in at about 0.18 seconds and 3.8 fps burst-mode shooting. You can set most shooting, focusing, playback and effects controls from the LCD, and the Pinpoint AF feature provides precision touch autofocus point selection for setting AF points anywhere on the screen by touching it. For those who prefer a more traditional shooting experience, there's a control dial for quickly cycling through all the available modes. Estimated Street Price: $699 (with 14mm); $599 (with 14-42mm). **Contact:** Panasonic, (800) 211-PANA, www.panasonic.com.

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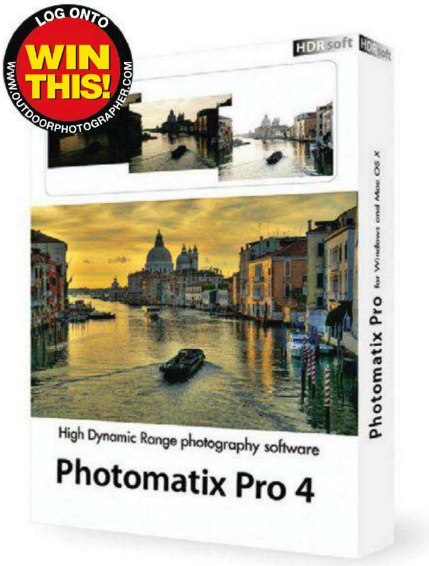
FLASH TOOLS ►

Light up a scene exactly the way you want using the **ExpoImaging Rogue Flashbenders**, a collection of portable light modifiers that can be molded into a given shape for directing or shielding light as desired. The **Bounce Card/Flag** can be used either as a reflector to bounce light onto a subject or as a flag to shield it away. The **Small Reflector** can be used as a reflector, a flag or as a snoot to produce a narrow circle of light. The **Large Reflecto**r serves the same purpose as the small version, but covers twice the reflective surface area. The units install quickly and work with all shoe-mount flash models. Estimated Street Price: $29 (Card/Flag); $34 (Small Reflector); $39 (Large Reflector); $104 (total set). **Contact:** ExpoImaging, www.expoimaging.com.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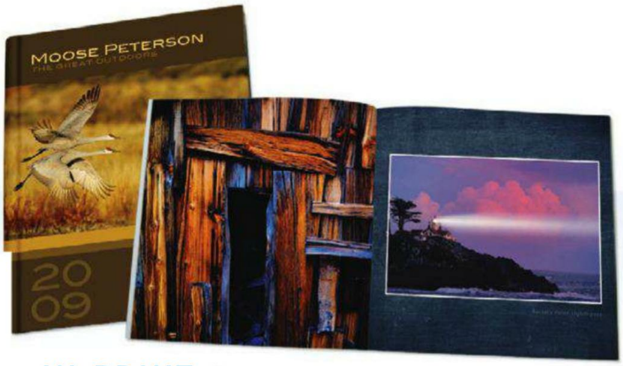
HDRsoft
Photomatix Pro for Windows and Mac OS X
High Dynamic Range photography software
Photomatix Pro 4

◄ THE HDR LOOK

HDRsoft Photomatix Pro gives you a number of options for compositing and controlling how you apply the high dynamic range look to your images. Like all HDR-processing applications, Photomatix Pro works its magic by combining data from multiple images. The program differs in that it performs either HDR tone mapping or Exposure Fusion, which reduces noise while blending different exposures into one image. For best results, you should use three photos separated by two EVs (i.e., two full stops) or five shots separated by one EV. Estimated Street Price: $99 (single license). **Contact:** HDRsoft, www.hdrsoft.com.



IN PRINT ▲

Photography books always make for great gifts, and there's perhaps no better way of personalizing such a present than creating one with your own images. Best of all, you can do it from your desktop. **Mpix** gives you the choice of making a softcover, hardcover or suede hardcover book with three different premium paper options—cover stock, pearl or linen. Once you've downloaded and installed the MpixPRESS software, just drop images and text into one of the many available templates or create your own. Once you're done, submit the book for printing. The software uploads the book to Mpix and automatically directs you to the website for order completion. Turnaround time is usually 24 hours. Estimated Street Price: $50 (11x8.5-inch hardcover). **Contact:** Mpix, www.mpix.com.

CARRY-ALL ►

Free your neck from the strain of carrying a heavy camera around it with **Cotton Carrier**. The **basic Camera Vest system** accommodates one or two regular DSLRs, comes with a unique one-size-fits-all adjustable vest and is available in a variety of configurations. The lighter, more streamlined **Cotton Carry-Lite** uses a cotton waist-belt system with a shoulder strap and works best for cameras with small- to medium-sized lenses. Estimated Street Price: Starts at $99 (both). **Contact:** Cotton Carrier, (877) 852-9423, www.cottoncarrier.com.

NEW YORK INSTITUTE OF PHOTOGRAPHY
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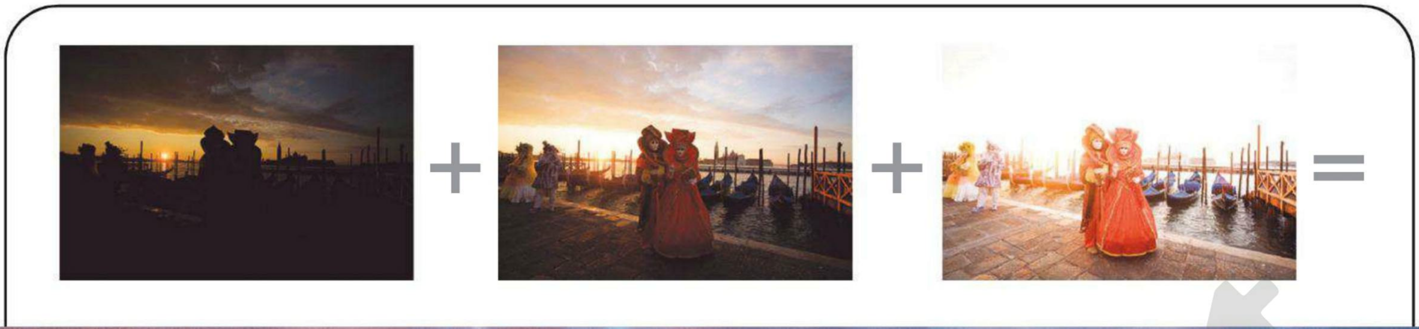
◄ BACK TO SCHOOL

For learning more about photography or honing the skills you already have, the **New York Institute of Photography** is a good place to start. Offering multimedia distance education courses for photographers of all levels, the school provides every student with a dedicated instructor to work with throughout the course. The Complete Course in Professional Photography covers all the essentials, including business skills with hard specifics on negotiating contracts, pricing images and dealing with legal matters. Every course includes printed lessons, supplemented with audio commentary and video displays. **Contact:** New York Institute of Photography, (800) 445-7279, www.nyip.com.

Do your images reflect your vision?



Now they can...with HDR processing!

Create the look you want with High Dynamic Range processing in Photomatix

If you have ever photographed a high-contrast scene, you know that even the best exposure will typically have blown out highlights and flat shadows. The solution to this problem is High Dynamic Range (HDR) processing. Take three or more photos at varying exposure levels and load them into Photomatix software for merging into HDR. The resulting image reveals highlight and shadow details and you may further adjust it to your liking. Various settings and one-click presets let you get the look you want, from natural-looking to painterly, surreal or ultra-realistic effects. **Make every image capture your vision with Photomatix.**

Venice, photo © Jacques Joffre / HDRsoft

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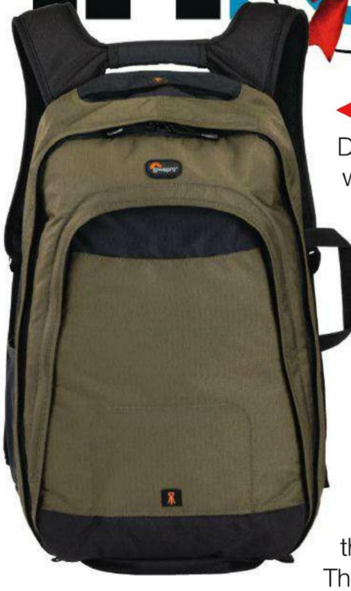
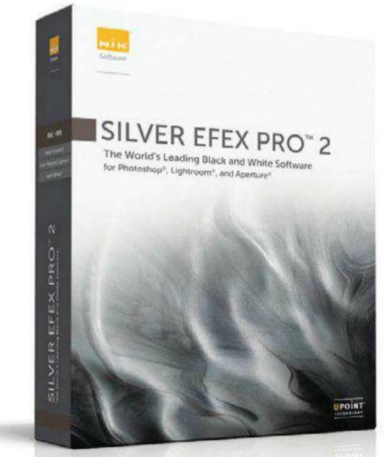


◄ FOR THE BIRDS

Designed specifically for bird and wildlife photographers, the **Lowepro Optic series of bags** has plenty of room for long lenses, scopes and binoculars. There are four bags to choose from. The **Field Station** is a beltpack for binoculars, a field guide and personal extras. The **Scope Porter 200 AW** fits a spotting scope, tripod, binoculars, hydration reservoir, field guide and more. The **Scope Travel 200 AW** holds all of that gear, but instead of a reservoir, the bag holds a compact camera. The **Scope Photo Travel 350 AW** offers the most room, storing a DSLR and an extra lens, as well as a laptop. Estimated Street Price: $99 to $249. **Contact:** Lowepro, (800) 800-LOWE, www.lowepro.com.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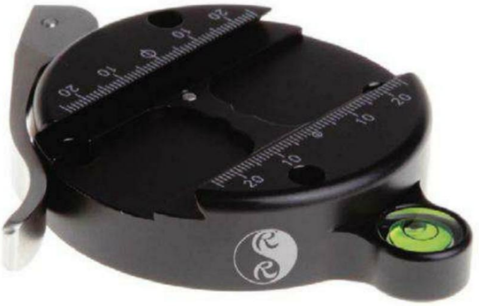
The World's Leading Black and White Software for Photoshop®, Lightroom®, and Aperture®
NIK Software
U POINT

◄ CLASSIC LOOK

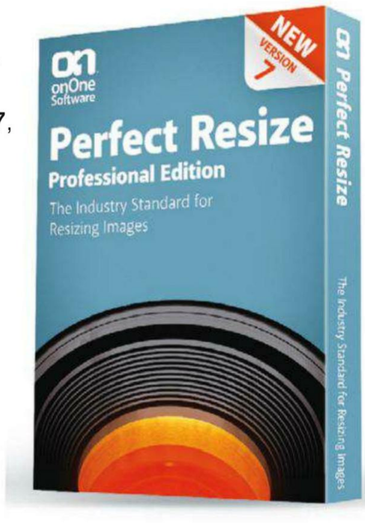
Convert from color to black-and-white with **Silver Efex Pro 2** from **Nik Software**. The upgraded plug-in now features a History Browser for comparing previous image versions or different editing treatments, adaptive contrast and brightness controls, new presets and selective colorization. Amplify Blacks and Amplify Whites adaptively increase highlights and shadows, respectively, throughout an image, creating a unique contrast effect. As with the previous version, Silver Efex Pro 2 uses Nik Software's U Point technology for selective editing. Estimated Street Price: $199 (new); $99 (upgrade). **Contact:** Nik Software, (619) 725-3150, www.niksoftware.com.

LEVELING CLAMP ►

Sometimes you don't need a ballhead when trying to stabilize your camera on a tripod. The **Really Right Stuff Leveling Base Clamp** is ideal for those instances when only a small range of motion is needed to level the camera. The clamp can be mounted directly to the top of any RRS leveling base, replacing the existing platform. When used with the TH-DVTL plate attached to the bottom of a tripod head, mounting becomes quick and easy. The unit works with all RRS 1.5-inch dovetail standard rails and most Arca-Swiss-compatible rails. Estimated Street Price: $130 (clamp only); $260 to $269 (leveling base and clamp). **Contact:** Really Right Stuff, (888) 777-5557, www.reallyrightstuff.com.



BIGGER PHOTOS ►



Blow up your wildlife pictures to poster or any other size and resolution with **Perfect Resize 7**, the next generation of **onOne Software**'s popular **Genuine Fractals program**. Features include sharper detail when increasing image size, more gallery wrap and tiling options (pro version), and interface enhancements. You can adjust the smoothness of curved edges to minimize halos, useful when resizing a low-resolution file. Two new methods allow small details to be made sharper without causing halos on larger edges. The first technique targets out-of-focus images and the second adapts the sharpening amount automatically to the size of image details. Estimated Street Price: $99. **Contact:** onOne Software, (888) 968-1468, www.ononesoftware.com.

SECURITY BOX ▼

The **LaCie CloudBox** backs up your image files to a local hard drive while also automatically mirroring an AES-encrypted copy to a cloud server daily, so if the device is damaged or inoperable, you still have online copies of all your files. Using LaCie's Online Restore software, you can browse and restore files and folders, up to 10 previous versions. Access is password-restricted, making your online backup even more secure. The CloudBox comes with a one-year subscription for 100 GB. Estimated Street Price: $199. **Contact:** LaCie, (503) 844-4500, www.lacie.com.

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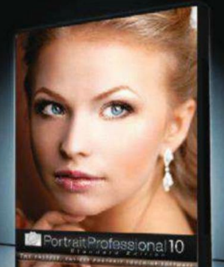

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HEAVY PAPER ▼

Aside from interesting pictures, these days all it takes to make a great travel photo book is an easy-to-use software program, a solid inkjet printer and top-notch quality paper. **Red River Pape**r has designed its **Arctic Polar Luster Double Sided photo inkjet media** specifically for books and portfolios. The 50-pound (190gsm) paper has the same luster surface on both sides so it won't smudge, and offers ideal color saturation and clarity. Arctic Polar is compatible with any inkjet printer, and comes in a number of sizes and sheet packs. Estimated Street Price: $24 (20 pages of 8½x11 inches). **Contact:** Red River Paper, (888) 248-8774, www.redriverpaper.com.

RED RIVER PAPER

PHOTO SCANNER ►

Scan 3x5- and 4x6-inch negatives with the **Flashpoint Photo Scanner (FPSCANA)**. With a built-in, real-time Scanning Detector to avoid distortion and an "over-speed alert" to control scanning speed, the device is easy to use. Scan resolution is up to 300 dpi, and images are saved as JPEG files. It supports Windows 7, Vista and XP, as well as Mac OS 9 and above. Estimated Street Price: $59. **Contact:** Flashpoint, (800) 223-2500, www.adorama.com.

PIXMA PRINTERS ▲

Make vivid, sharp-looking prints of your nature and travel photography using a couple of new printers from Canon. With five individual ink tanks, 9600x2400 dpi resolution, a 3-inch LCD and wireless connectivity, the **Canon PIXMA MG5320 Wireless Photo All-In-One** has a variety of useful features. Using the ChromaLife100+ ink system, prints are produced with dye inks and Canon's FINE print head. The **Canon PIXMA iP4920 Inkjet Photo Printer** also uses the ChromaLife100+ ink system with five separate ink tanks. The main difference between the printers is the MG5320 also has faxing and scanning capabilities. Estimated Street Price: $149 (MG5320); $99 (iP4920). **Contact:** Canon, (800) OK-CANON, www.usa.canon.com.

STURDY LEGS ►

Steady your shot using the **Davis & Sanford Magnum XG tripod** from **Tiffen**. Made from a high-quality aluminum alloy, the tripod's legs have been redesigned to offer improved ergonomics of the leg-angle release mechanism and the quick-action leg locks for speedier setup. The maximum height is 72 inches and the lowest is 8 inches. The FX12 low-profile head, which is included with the Magnum XG, incorporates an advanced built-in fluid system that's ideal for use with HD video DSLRs. Load capacity is up to 12 pounds. Estimated Street Price: $99. **Contact:** Tiffen, (631) 273-2500, www.tiffen.com.

Stocking Stuffers

HOODMAN RAW 4 GB COMPACTFLASH MEMORY CARD

You can't have too much memory. The **Hoodman UDMA RAW 4 GB CompactFlash** is fast and reliable. The 675X 100 MB/s speed can keep up with a fast DSLR, and it makes downloads to the computer painless. Hoodman CF cards are built in the USA and feature a lifetime warranty. Estimated Street Price: $89. **Contact:** Hoodman, (800) 818-3946, hoodmanusa.com.

LENSPEN PHOTOPRO KIT

A dirty lens and sensor lead to a need for tedious computer retouching or worse: unusable images. Keep your DSLR and lenses spotless with the **LensPen PhotoPRO kit**, which includes the LensPen, MiniProII and MicroKlear cloth. The kit comes with a case to keep all of the components together. Estimated Street Price: $25. **Contact:** Tocad, (973) 627-9600, www.tocad.com.

GIOTTOS MICROFIBER MITTEN

Wiping down a camera, lenses, LCD screens and even a tablet screen is easy with the **Giottos Microfiber Mitten**. Having one of these in your bag at all times is a must for any nature shooter. The microfiber construction can hold seven times its weight in water, it absorbs oil, and it won't cause a buildup of static electricity. Estimated Street Price: $10. **Contact:** HP Marketing Corp., (800) 735-4373, www.hpmarketingcorp.com.

KEEP ON THE LEVEL

The **Manfrotto 337 Hot Shoe Double Axis Spirit Level** takes the guesswork out of keeping your DSLR lined up with the horizon. It fits right on the camera's hot-shoe, and it weighs next to nothing. This is one of those little accessories that should be part of everyone's standard kit. Estimated Street Price: $27. **Contact:** Manfrotto, (201) 818-9500, www.manfrotto.us.

DOMKE WRAP 15"x15"

These simple, padded squares from **Domke** won't scratch your equipment and can safely wrap lenses, extra bodies and accessories. Velcro® hook-and-loop tabs on the corners self-affix to the knit fabric to hold the wrap closed. Estimated Street Price: $15. **Contact:** Tiffen, (800) 645-2522, www.tiffen.com.

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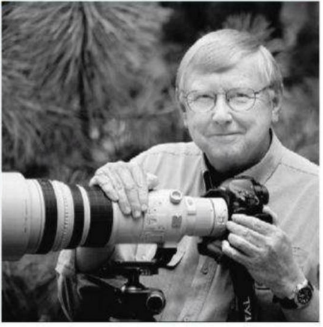

Speed Up To Slow Down

Slo-Mo Video • What You Get Isn't What You Got
False Magnification?

[**By George D. Lepp With Kathryn Vincent Lepp**]

A rafting adventure on the Arkansas River is the perfect subject for slow-motion video. The fastest shutter speed on my Canon DSLR's video mode is 1/4000 sec.—plenty fast to stop the action in each frame of the video, which is captured at 60 frames per second, then rendered for viewing in slow motion.

Slo-Mo Video

Q *I see videos on TV and YouTube that show the subject in slow motion. Are these photographers using special cameras and software, or can I do this with my DSLR's HD video? I'm especially interested in using this technique for flying birds and wildlife.*

J. Crawford
Via the Internet

A I've always been fascinated by slow-motion films that allow us to see what the human eye and brain can't normally discern. So one of the best things about the newer DSLRs with high-definition video is that they offer us mere mortal photographers the opportunity to capture some great slow-motion footage. Here's how to get the best results.

First, it's best to capture the video with the camera set to 60 frames per second (fps) rather than the normal 30 fps. Depending upon your camera, this will probably mean a bit less resolution because, at the higher capture speed, most DSLRs shoot at 720p instead of 1080p. This isn't a big problem because 720p video still looks great on your computer screen or HDTV, but I'm sure that we'll see DSLR video with 1080p at 60 fps soon or maybe even 120 fps at 720p.

Second, set the video function on manual and choose a fast shutter speed for each frame of the video. When the video is slowed down, each frame needs to be sharp. The normal shutter frame rate for video is from 1/30 to 1/60 sec., but this isn't fast enough to stop action with a fast-moving subject, so every frame would be blurred. Keep in mind also that if the shutter speed is significantly faster than the frame capture rate, the action may not be smoothly portrayed when rendered in slow motion due to the blank time between each capture. Thus, your capture rate and shutter speed are variables you need to consider in the context of the subject's speed of movement and the ambient conditions. To attain faster shutter speeds in the video, the photographer can raise the ISO of the camera and possibly set a larger lens opening.

The third component is the rendering software where the viewing speed can be set for slow motion. I've been using Apple iMovie to render my video, but other programs, such as Adobe Premiere Elements and Apple Final Cut Pro X, have the same capability. If you want to take this to the next level, there are plug-ins for Final Cut Pro X that will smooth transitions in slower renderings.

So the answer is yes; you can produce great slow-motion video with a video-capable DSLR, especially those shooting at 60 fps, and basic video-rendering software. Now all you need is an action subject that lends itself to slo-mo.

What You Get Isn't What You Got

Q *Is it too much to hope for an image on my computer to look anywhere close to how it looked in my camera? I use a DSLR and shoot in RAW format, using my histogram for proper exposure. When any image is*

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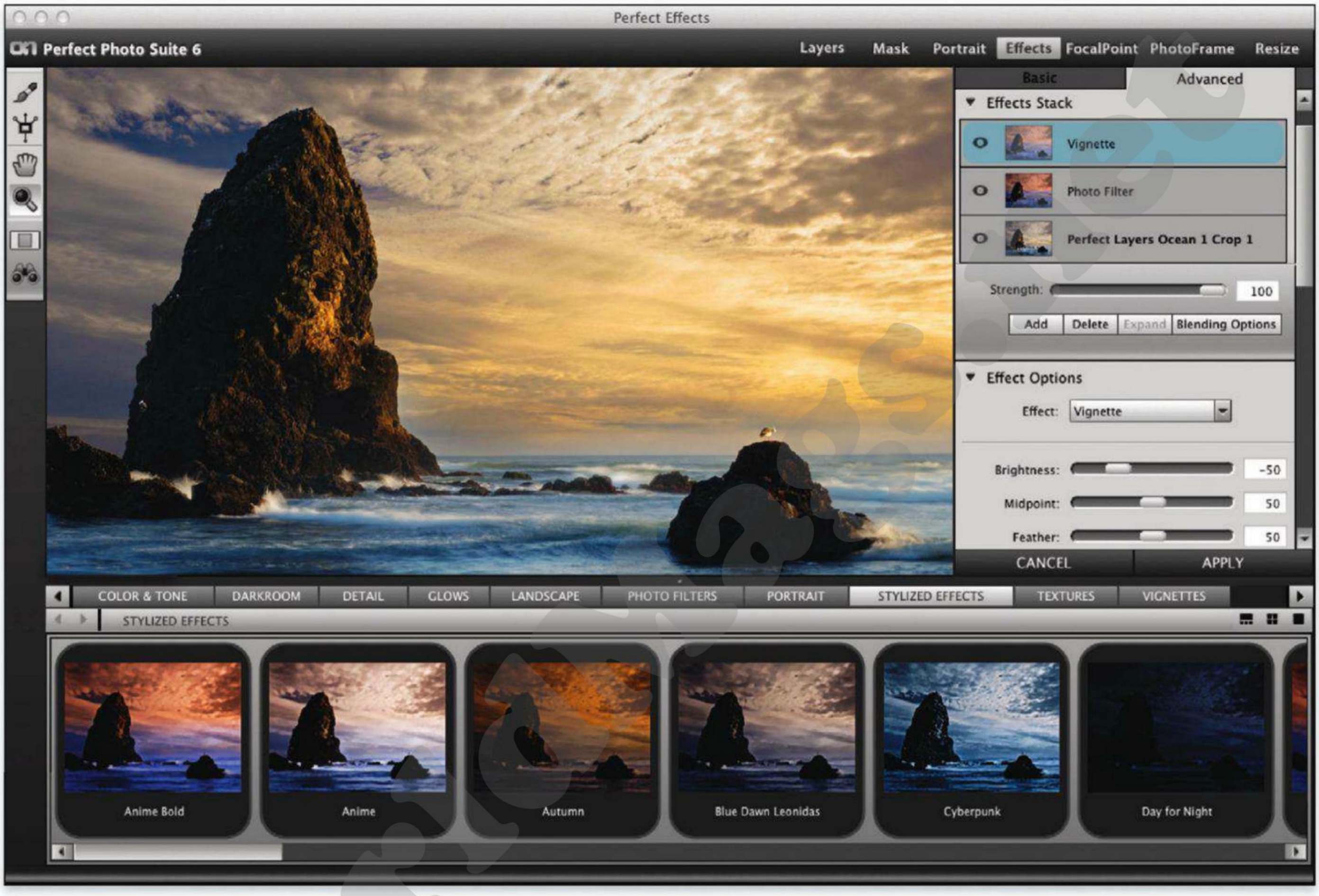
Perfect **Effects 3**

New from onOne Software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Blending Options
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Effect: Vignette

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downloaded and opened with Photoshop Elements 5, everything is overexposed by several stops. The image that looks the best when printed on paper is adjusted to appear underexposed on my computer monitor. I'm so frustrated with digital that I'm thinking of going back to film.

D. Rea
Erie, Pa.

A If your LCD is set to the middle brightness setting, the image it shows you should look the same as it does on the computer. And if the histogram when viewed on the LCD indicates proper exposure, that rendition should be the same when viewed on the computer. I suspect the problem lies in your software, which is an older version that may not support the RAW format from your DSLR. You may achieve an immediate fix by upgrading to the current version (Elements 9). To test this out, download the 30-day free trial.

But if you want to run some tests first to clearly isolate the problem, take your capture media, with the original RAW files, and ask someone else to upload them to his or her computer. If the files read accurately on a different computer with newer or different software, then the problem definitely isn't in your camera or media, but rather in your own post-capture processing system.

If colors and brightness display properly when you're performing other tasks on the computer (such as working on the Internet), the problem probably isn't your monitor. If it looks good otherwise, consider whether the display is of comparable quality to the LCD screen on your camera. Older monitors aren't up to the task of digital photography. You also should calibrate your monitor periodically to set the display to standardized color rendition. Calibration has a strong connection to optimal printer output because you need to know that your computer and your printer interpret color data in the same way.

That said, most images will need to be fine-tuned as they're printed, and the photographer's ability to accomplish this without a wet lab is one of the best things about digital. To achieve the best output, invest in a photographic printer with a wide range of ink colors; these are available from Epson, Canon and HP. One of the best features of the Canon printers is the ability to make small adjustments to color and saturation with software that "plugs in" to Elements and Photoshop, and to save those changes as a particular set of instructions that you can apply to the same image again and again.

There's no doubt that learning to process digital images can be frustrating, especially if your equipment isn't up to the task. But once the photographer has gained the necessary skills, digital imaging can be far easier and more versatile—and produce much better results—than film. I personally have no desire to ever shoot another roll of film. But that's just me.

False Magnification?

Q *I notice in your captions, you state the lens used and the effective focal length of the camera/lens combination, i.e., "100-400mm at 400mm (640mm with 1.6x crop factor)." As I understand crop factor, there's*

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PATENT US 7,386,229 B2 and 7,034,877

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no additional magnification, but a perception based on a field of view equal to 640mm due to the sensor being smaller than a 35mm-sized sensor, although there are many people who think they're getting the equivalent magnification of a larger lens. Is it important to state the crop factor in caption info?

R. Gilbert
Via the Internet

A We've addressed this point on several occasions, but I really believe it's important, so we'll talk about it again.

The discussion begins with a holdover from film days. While our digital cameras are equipped with many different sizes of sensors (which record the images we capture), lenses are still standardized to 35mm film (24x36mm), based on the field of view (or angle of view) that the given lens records on a sensor of that size. Canon, Nikon and other manufacturers make cameras with sensors that are full frame (24x36mm, like 35mm film) and smaller. Given the same lens, a smaller sensor records a lesser field of view than the full-frame sensor, essentially cropping the image so that only the center is recorded. The relationship of the field of view achieved by the smaller sensor compared to the full-frame sensor is called "a crop factor" or a "focal length multiplier," and while each type of sensor has its own specific name, it's commonly expressed in terms that suggest magnification, such as Canon's 1.3x and 1.6x sensors, Olympus' 2x sensors and Nikon's 1.5x sensors. The Canon PowerShot SX30 IS advanced digital compact camera has a true focal length range of 4.3mm to 150.5mm, but the effect (angle of view) as compared to 35mm full frame equals 24mm to 840mm. The extended reach of the lens by a factor of about 5.6x is real, whether it's called magnification, a multiplier, the crop factor or angle of view. I always try to provide this information in my captions, but I certainly don't think it's necessary for all photographers to do so.

Some photographers with highly technical approaches are unhappy with this characterization of the phenomenon, but there's no reason to get emotional about it. We don't really need to continue to define everything about digital photography in terms of film equivalents. Rather, I hope that photographers can begin to recognize the benefits and drawbacks of the various options and choose the ones that are best suited to their photography. For example, cameras with full-frame sensors are excellent choices for landscapes where a wider view is desirable, while smaller sensors that extend the reach of the lens are especially suited to wildlife photography. Smaller sensors generally yield an image of less quality, but even this digital axiom is being challenged as digital technology advances and all sensors are optimized for their particular uses. **OP**

For information about upcoming seminars and digital-imaging workshops, visit www.georgelepp.com. If you have any tips or questions, address them to: OUTDOOR PHOTOGRAPHER, Dept. TT, George Lepp, 12121 Wilshire Blvd., Suite 1200, Los Angeles, CA 90025-1176 or online at www.georgelepp.com.

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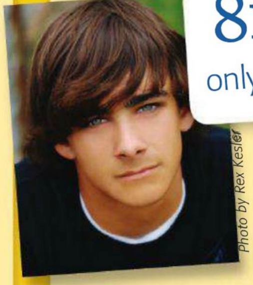

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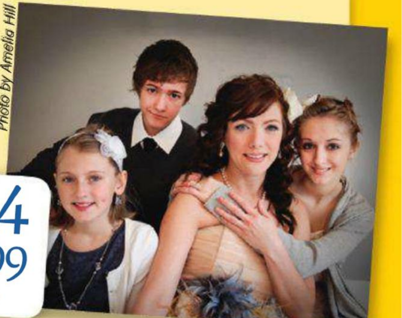

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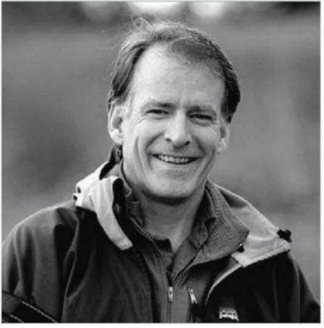
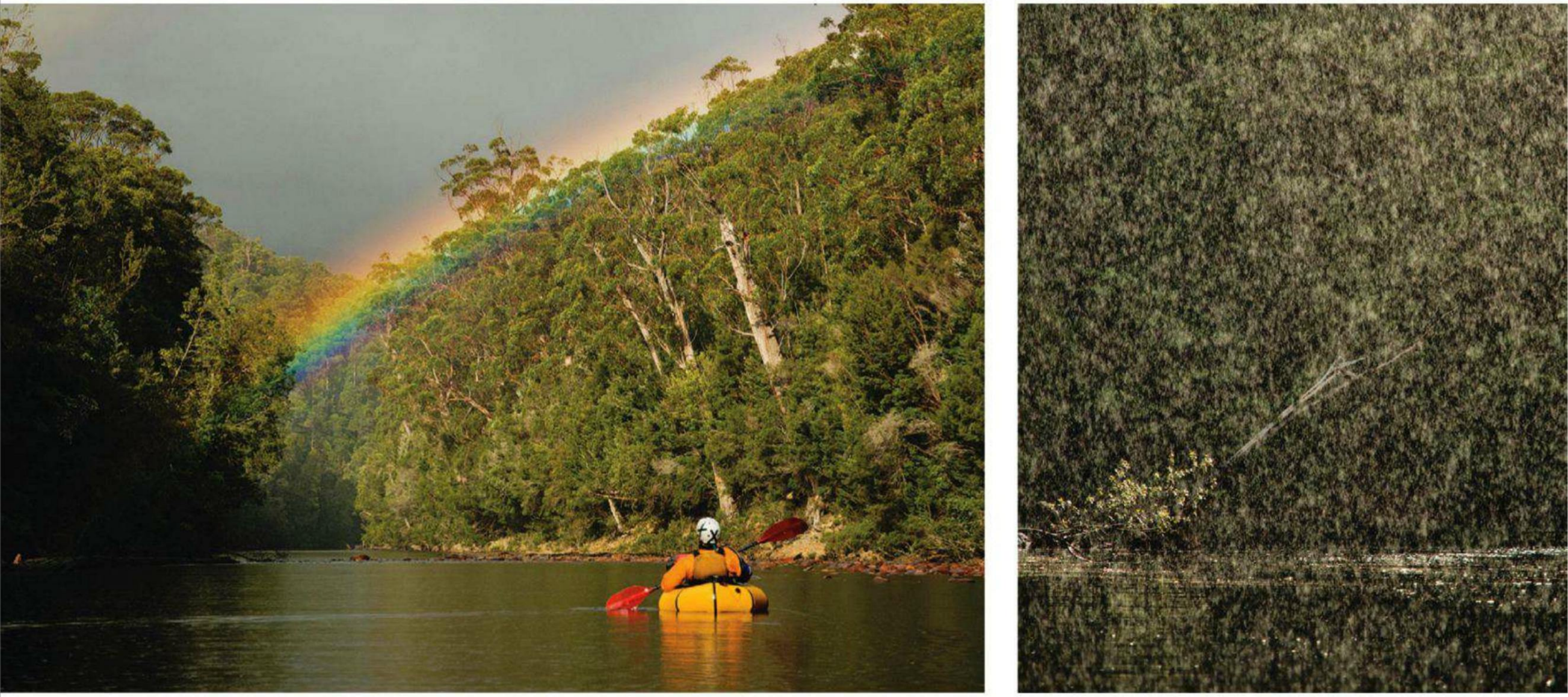


Playing In The Rain

Bad weather, good photos

[**By Bill Hatcher**]



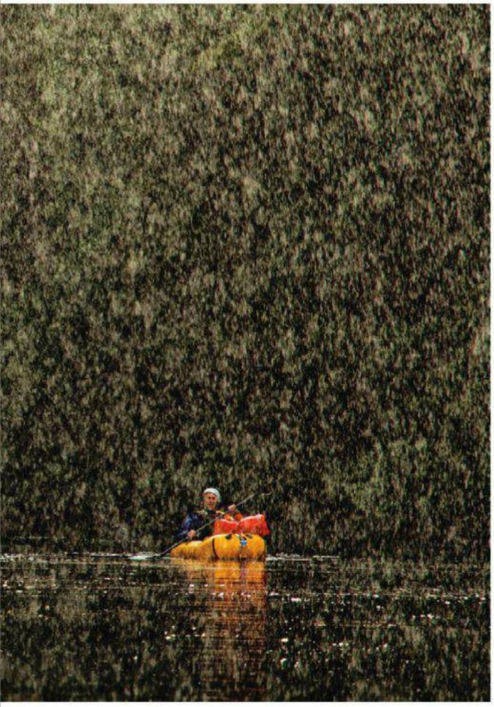
On the Huon River in Tasmania, Bill Hatcher didn't let a little rain get in the way of any photo opportunity.

I get a kick out of shooting in the worst kinds of weather—rain, snow, sandstorms—that sort of thing. More often than not, I don't get a decent photo, and my camera ends up soaked or worse, but even so, there's a kind of perverse satisfaction in just being out there in the worst of it to watch what happens. For me, the best part of witnessing a storm, especially a fast-moving storm, is the changing light. I enjoy the moments when the storm is clearing and the sun begins peeking out from under the clouds; odds are pretty high that I'm in for a great show.

When I was in Tasmania for the five-day Franklin River packraft trip this year, our three-man packraft expedition decided we should do a practice run. We wanted an overnight trip down a challenging river with Class III to IV rapids. It was decided our practice trip was to be a two-day paddle down the Anne River to the Huon River. The purpose of the trip was to ease some "Franklin jitters," as well as to check out the new boats and give us a chance to travel and work together before the very committing Franklin trip. I was getting pretty amped for the photography on the Franklin descent and, to be honest, wasn't really expecting spectacular images on this warm-up creek. Once we put on, the Anne's very low flow further decreased my hopes for good action photography. The first day was a 10-hour, boat-dragging ordeal—a rocky anti-climax to the Class III to IV whitewater we were expecting. It rained throughout our first night, but the flows remained low, and during the second morning, we spent more hours hauling our boats over rocks under a gray, overcast sky. The photography was as uninspiring as the paddling, but I didn't give up hope because, in Tassie, the weather changes fast.

On the second day, after more hours of carrying and pulling our boats down the Anne, we eventually joined the much bigger Huon River. By midafternoon, the river conditions improved with higher flow and current—the catchment had finally responded to the previous night's rain. I knew being in this larger river system could make for weather-related photos, since storms often track up and down big-river basins, whereas in smaller drainages like the Anne, the weather gets more socked in. My strategy paddling down the Huon was to keep myself positioned between my two packrafting mates. This placement allowed me to shoot a boat looking both downstream as well as upstream. Toward evening, rounding yet another of many river bends, the sun at last broke through the clouds. This occurred at the same moment that another rain squall moved upriver toward us. As luck would have it, I had the sun to my back, and I knew this to be the perfect situation to create a rainbow downstream, so I paddled hard to close the gap with the front boat. The rainbow materialized over the river the instant the sun's rays touched the falling rain.

To compose the rainbow photo, I paddled to a position above and right of the downstream boat as the colors of the rainbow intensified. Once I found the sweet spot for the photo, I stopped paddling, grabbed my camera from my Pelican case and shot photos until the rainbow faded.



The rainstorm moved over me, continuing its upstream track. It was raining pretty hard by now, so I wiped my camera and lens with a chamois and returned it, but didn't fasten the Pelican case on my lap. Upstream I watched the sun highlight the falling raindrops perfectly against the dark forest, and this light effect inspired my next series of photos.

In this steady rain, I waited a long minute before the second boat appeared into view. I quickly brought my camera out of the Pelican case, and with my hand shading the lens from the sun and rain, I was able to compose the sun-illuminated upstream boat in one corner and the river shore in the opposite corner, and fill the rest of the photo with the blurred falling raindrops. Focusing and metering manually, I got off a few shots, and then the moment was over and my camera was soaked.

A few hours later, we reached the takeout under a starry sky. Originally, we estimated that we would spend seven or eight hours paddling in boats for the two-day trip. But because of the low water, we spent nearly 24 hours paddling and hiking our boats down the river. My best photos of the trip weren't in whitewater, but were made during a three-minute window in the final hour of light near the end of the trip. The weather had succeeded in salvaging yet another Tasmanian photo adventure. **OP**

You can visit ***Bill Hatcher****'s website at www.billhatcher.com.*

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Be An Outdoors Person

Improve your nature skills to improve your photography

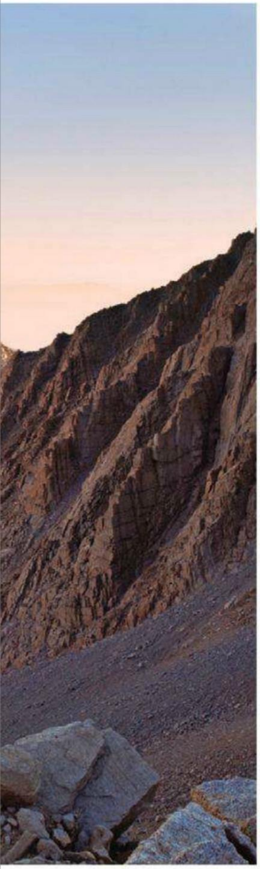
[**By Elizabeth Carmel**]

Sunrise on the Whitney Massif, Sequoia National Park, California.

An endless supply of unique, never-photographed locations awaits all of us in the more remote areas of our country. Getting to these locations is the challenge. I know that in my region of the Sierra Nevada Mountains, I have barely scratched the surface of photographic opportunities. However, I have been able to access new areas and photograph new locations because I have some basic outdoor skills I learned from friends and from various training courses. A lifetime of traveling through the outdoors has helped me further my skills each year. I have taken courses and have proficient skills in backcountry skiing, avalanche safety, winter survival, glacier travel, rock climbing, whitewater kayaking, scuba diving, mountain biking, and topo-map and GPS navigation. All this helps with my confidence in outdoor situations and expands the horizons of photographic possibility. I also think that an outdoor photographer should be an outdoor athlete, and have the endurance and strength to hike miles from the road with his or her photographic gear and survive unexpected weather.

Good outdoor skills and fitness allow you to safely get to less-traveled landscapes. Most often, the areas that are farther away from roads will be more pristine. Wilderness areas close to their primeval condition have a rare beauty that can be more powerful and more photogenic than the "iconic" locations well known to all landscape photographers. Often, the journey on a trail to your photographic destination can offer better photographic opportunities and surprises than your final destination. In addition, knowing more about the landscapes you're traveling through can provide valuable insights into how to get the best photographs.

If you want to kick it up a notch with your photography, set a personal goal to add a new outdoor skill to your résumé. There are so many opportunities for this type of training, from taking a vacation in snow country to learning how to



cross-country ski, to scuba diving in the Caribbean, to signing up for a Sierra Club "intro to backpacking" course. The various REI store branches have a monthly calendar of outdoor-skills training, usually free or at very low cost. Be sure to get up to speed on the latest and greatest outdoor gear as well, including the new generation of lightweight down jackets, rain parkas and hiking boots. Once you have the training, be sure to put it into action—strap on a backpack and ski or hike to a new area, camp out, and get some great sunrise and sunset pictures. Most often, you can't get great shots on a day hike. Our avocation is challenging because we have to capture beautiful places, in great light and during the right season, which doesn't come easy.

Ultimately, photography is about experiencing our world in a deeper, more vivid way. This goal is enhanced by having the skills and confidence to reach more remote areas untouched by man. For women, especially, don't be afraid to venture by yourself down a wilderness trail. Last autumn, I had a wonderful adventure in the Southwest, which involved solo hiking to The Subway in Zion, and then later driving by myself down the remote 60-mile dirt road to the North Rim of the Grand Canyon. I was able to bring back images from these adventures, which have successfully sold in our gallery as fine-art prints. What I enjoy most is sharing the stories behind these images with people in the gallery, who likely will never have the opportunity to see these sights with their own eyes. Remember that fear of venturing alone into the outdoors can be effectively addressed by skills, practice and fitness. I must also mention that I'm proud to count as friends some impressive outdoor athletes who don't have use of their legs, but who can travel self-propelled through the mountains with specially adapted equipment. Find a way to work with any physical challenges.

My advice regarding fitness: Start walking. Go on longer weekend walks or hikes. Do some basic strength training. I have a set of kettle bells I use at home a few times a week for 10 minutes a pop—it doesn't have to be a big, expensive deal with gym memberships, etc., unless you want it to be. I know this may seem basic to some readers, but I feel compelled to offer this advice after watching some of my workshop participants struggle with travel in mountain terrain with their camera gear. As we age, we have to be increasingly vigilant about our strength, endurance and health. If you need motivation, tell yourself to get fit for the sake of your photography!

The photograph I have selected to include with this column shows a shot I was proud to capture, since it was far from the road in a remote location. Sunrise on the Whitney Massif required a two-day hike into the high country of California's Sequoia National Park, with a tentless bivouac at 12,000 feet below Arc Pass and an early-dawn climb to a 13,000-foot pass where I planted my tripod for the sunrise. The wind was brutally cold, requiring a down parka even though it was August. I relied on the generosity of my fellow hikers to help me haul my gear to the pass—they all received a copy of this print, of course.

Map out a program to buff out your outdoor-skills résumé and yourself. Find a location you have always wanted to experience and corral some friends into an adventure with you. You'll come back not only with a deeper appreciation for our world, but also a healthier body, greater confidence and, hopefully, some wonderful new photographs and stories. **OP**

*You can see more of **Elizabeth Carmel**'s photography by visiting her websites, elizabethcarmel.com and thecarmelgallery.com. Workshop information is available at elizabethcarmel.com.*

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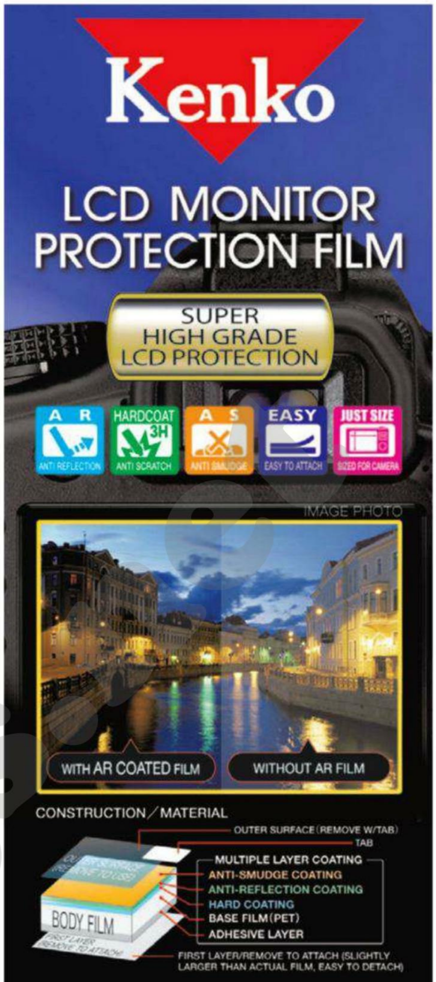

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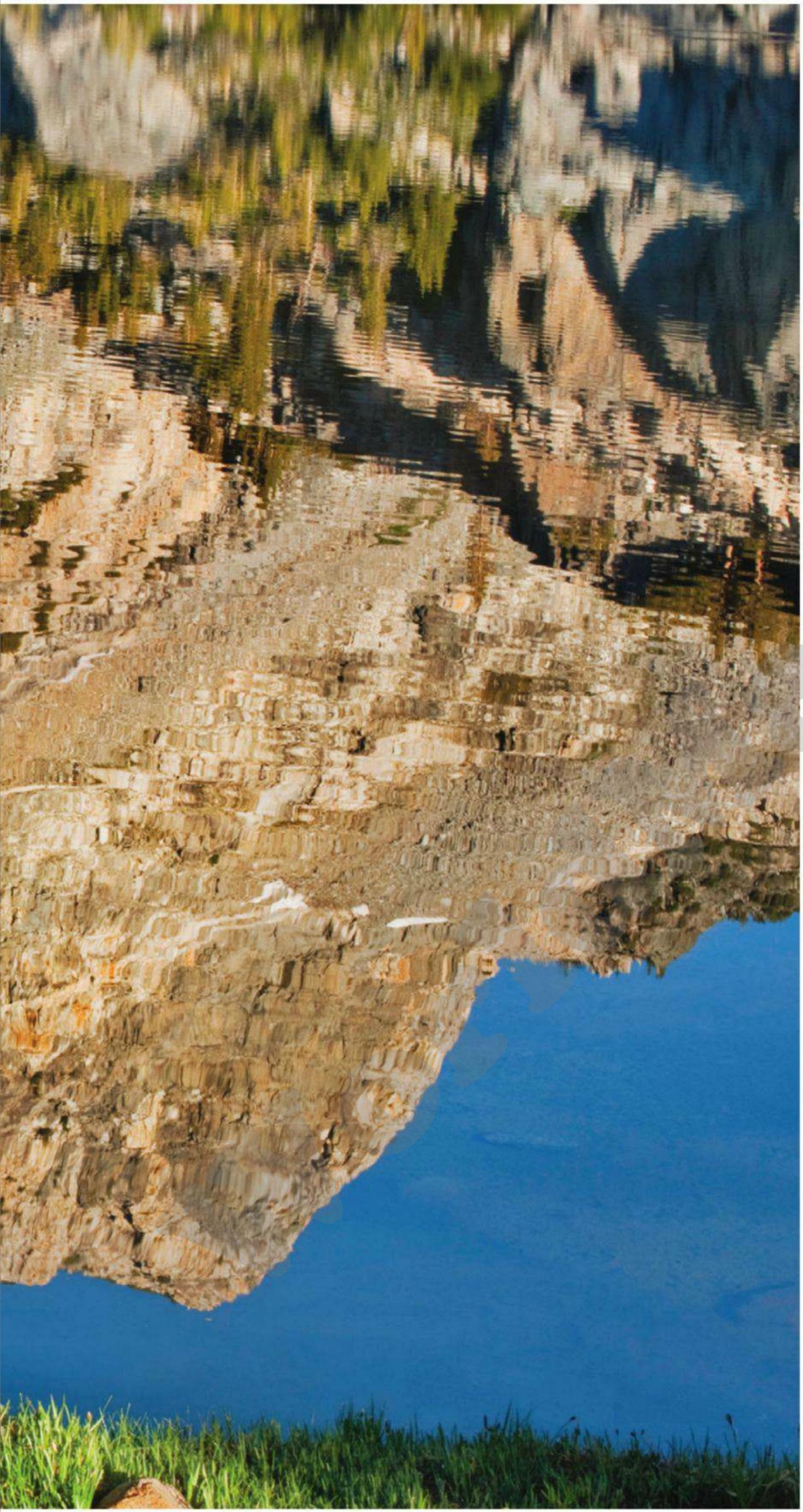
Wilderness Reflections

world view

[**By Frans Lanting**]



Get creative during one of Frans Lanting's April 2012 workshops in Santa Cruz and Monterey, California. See a video clip at www.lanting.com/workshops.html.

California's Sierra Nevada has drawn people ever since word first got out about its breathtaking beauty. In the 1860s, Alfred Bierstadt enshrined these mountains as an iconic American place with his monumental paintings. On his first visit a few years later, John Muir fell in love with what he called the "Range of Light." He founded the Sierra Club in 1892 and then successfully lobbied President Theodore Roosevelt to declare Yosemite a national park. Ansel Adams went on to document the backcountry on film like no one before him, and his classic images became important assets in environmental campaigns.

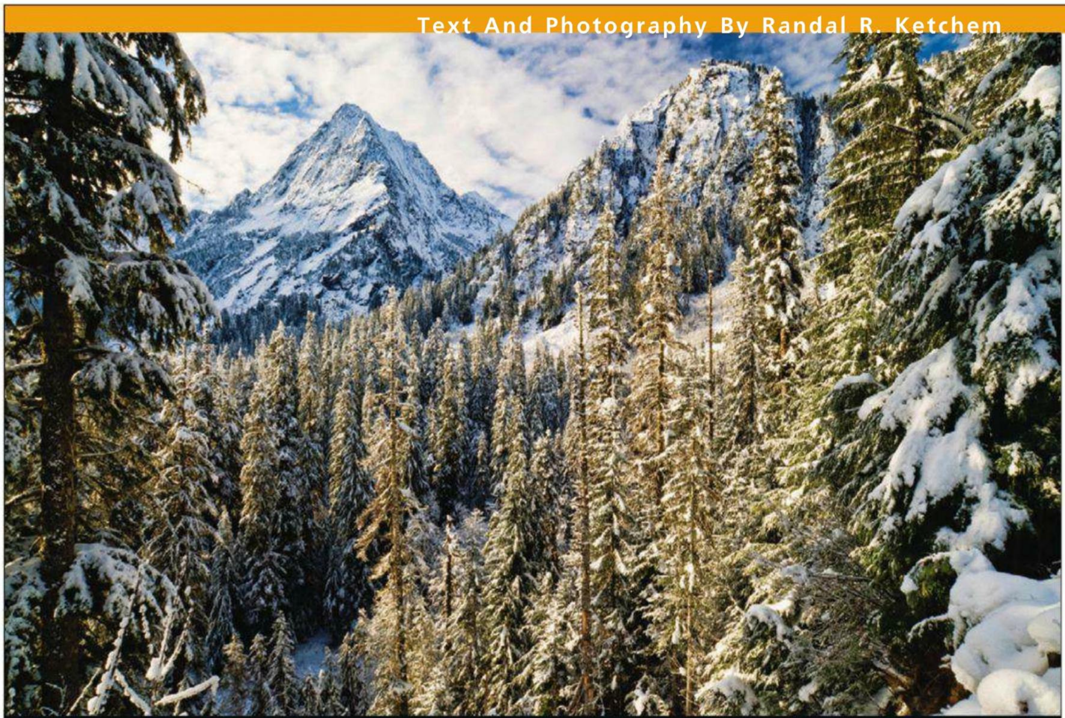
The Sierra Nevada is now within a day's drive for 40 million people, and yet early conservation victories have ensured that it's still a world-class wilderness, where people can escape from their urban lives and nourish their souls.

I became enthralled by the Sierra myself when I first went backpacking there decades ago. Recently, I returned to the high country with friends to spend a week camping by an alpine lake in the Ansel Adams Wilderness.

One morning, several of us went out to photograph at dawn. I was struck by the reflections on the lake's surface and began to look for ways to abstract the scene with just a hint of context. I cropped in close and used a few rocks and a sliver of shoreline to anchor the composition. A telephoto zoom lens stopped all the way down compressed everything into one plane and rendered all elements with equal sharpness, which contributes to the image's illusionary quality. I liked what I was seeing in my viewfinder, but wondered if I could go any further.

When my friend Scott Smith crouched down by the shoreline, everything fell into place. He completed a composition that captures the serenity of a glorious mountain morning, but also humanizes the wilderness experience and reflects on the role that so many artists and activists have played in preserving the Sierra Nevada for all of us. **OP**

Text And Photography By Randal R. Ketchem

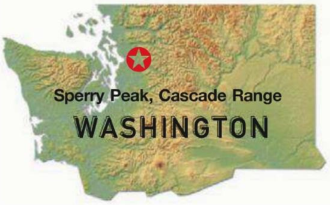


Sperry Peak, Cascade Range

WASHINGTON

Location

Sperry Peak is located in the Cascade Mountains along a section of the scenic Mountain Loop Highway. From Granite Falls on the Mountain Loop Highway, drive about 28 miles to Forest Service Road NF-4065. Turn right on NF-4065 and drive almost to the end of the road, about 1.6 miles, to a turnout on the right. Views of Sperry Peak are west/southwest, and another lookout worth a visit is about 0.2 miles further. Along the way, you'll pass the Verlot Ranger Station-Public Service Center, a great place to stop for information on the region, maps, trail conditions, road closure information and trail passes, if you intend to hike, and it's also the last real bathroom for many miles. This section of the Mountain Loop Highway closes with enough snowfall, so you may need snowshoes if the snow levels are high.



Weather

The area is usually comfortable through most of the year. It's rarely ever too hot and very rarely muggy, though winter can be quite cold. Winter snows produce incredible and dynamic landscapes, but also make it harder to reach many of the higher-elevation spots without chains or snowshoes. Spring months warm the snow, leading to many waterfalls, raging creeks and full rivers. Summer months bring less rain and very green forests. Fall begins to get cooler, and the daylight shortens quickly, but regardless of the season, the sun sets toward Sperry Peak, so keep that in mind when planning. Be patient with the weather. For this shot, the area was completely clouded over until there was a break in the clouds that lasted about 30 minutes, so it was worth the wait. Bear in mind that this is the Pacific Northwest. Be prepared for ample rain, though it's often in the form of drizzle, and the clouded, dispersed light can especially accentuate macro photography.

Photo Experience

I use a B+W circular polarizer to cut down glare, bring out the natural colors of the area, darken skies and add more detail to clouds. Bring along a macro lens to capture close-ups of wildflowers and berries. I carry a Tamron AF 180mm F/3.5 Di SP A/M FEC LD (IF) 1:1 Macro. Whether shooting wide landscapes or macros, a tripod is necessary for sharp shots. I use a Manfrotto tripod with an Acratech V2 ballhead for fine-tuning compositions. A wide-angle to capture the landscapes is a must. I bring a Tamron 18-270mm F/3.5-6.3 Di II VC or 11-18mm F/4.5-5.6 Di II SP LD. For some very wide shots, I'll shoot a series of images at a longer angle and use Photoshop's Photomerge panoramic mode to stitch them together.

Best Times

The views of Sperry Peak are beautiful any time of year, but the winter months offer the most striking details of the mountain. Winter also can present the most dangerous conditions, however. The best time to visit, therefore, is just after the first few snows of the year when the road is still drivable. During the early fall, the wild blueberries and huckleberries provide splashes of color in the region, with large expanses in some areas, particularly on Mount Dickerman. **Contact:** Verlot Ranger Station-Public Service Center, (360) 691-7791. See more of Randal R. Ketchem's work at his website, www.rrkphoto.com. **OP**

Essential Gear...

Locations in the Pacific Northwest are prone to high levels of moisture and rapid temperature fluctuations, especially when moving from indoors to outdoors. This can cause condensation in lenses and cameras that ultimately can build to cause fungus or mold within the gear. The **BRNO dri+Cap dehumidifying lens caps for Canon and Nikon systems** protect your gear by minimizing condensation buildup and maintaining optimum relative humidity between 35% and 45%. Available separately or in kits, each kit includes one body cap, one rear lens cap and eight replaceable silica gel packs that change color from orange to green when they need to be changed. Estimated Street Price: $44 (dri+KIT CAN for Canon, dri+KIT NIK for Nikon). **Contact:** BRNO (HP Marketing Corp.), (800) 735-4373, www.hpmarketingcorp.com.

What's Your Favorite Place?

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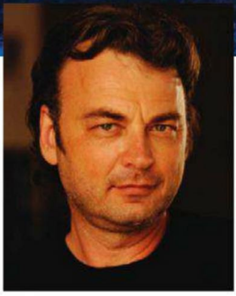
DAVIDHONL

Mount Nemrut, Turkey



"The statues of Mount Nemrut (the 1st Century BC tomb-sanctuary of Antiochus erected in a remote mountainous area of Southeast Turkey) proved to be a very challenging shoot both physically and photographically. A 7000' elevation, impending snowstorm, and extremely flat lighting didn't help matters. To create depth between the displaced head and the statue bodies in the background, I used the age-old trick of setting my white balance to tungsten and correcting my flash with full CTO filters. Just the kind of dramatic light this awe- inspiring ancient site deserves." - photojournalist David Honl

Camera: Nikon D700, Nikkor 28mm 2.8
Lighting : Traveller8 Softbox with two Honl Full CTO filters on a single Nikon SB900 Speedlight

Born from his necessity for quick, portable and effective lighting, all Honl Photo light modifiers are designed and field tested by photojournalist David Honl while on location in some of the world's most challenging places. Afghanistan, Iraq, Turkey, Jordan and Kazakhstan are all on Honl's regular travel schedule and continue to be the inspiration for his lightweight and innovative modifiers for portable shoe mount flash units.

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Mount Nemrut photo by David Honl/ZUMA Press; headshot by Claudia Christian

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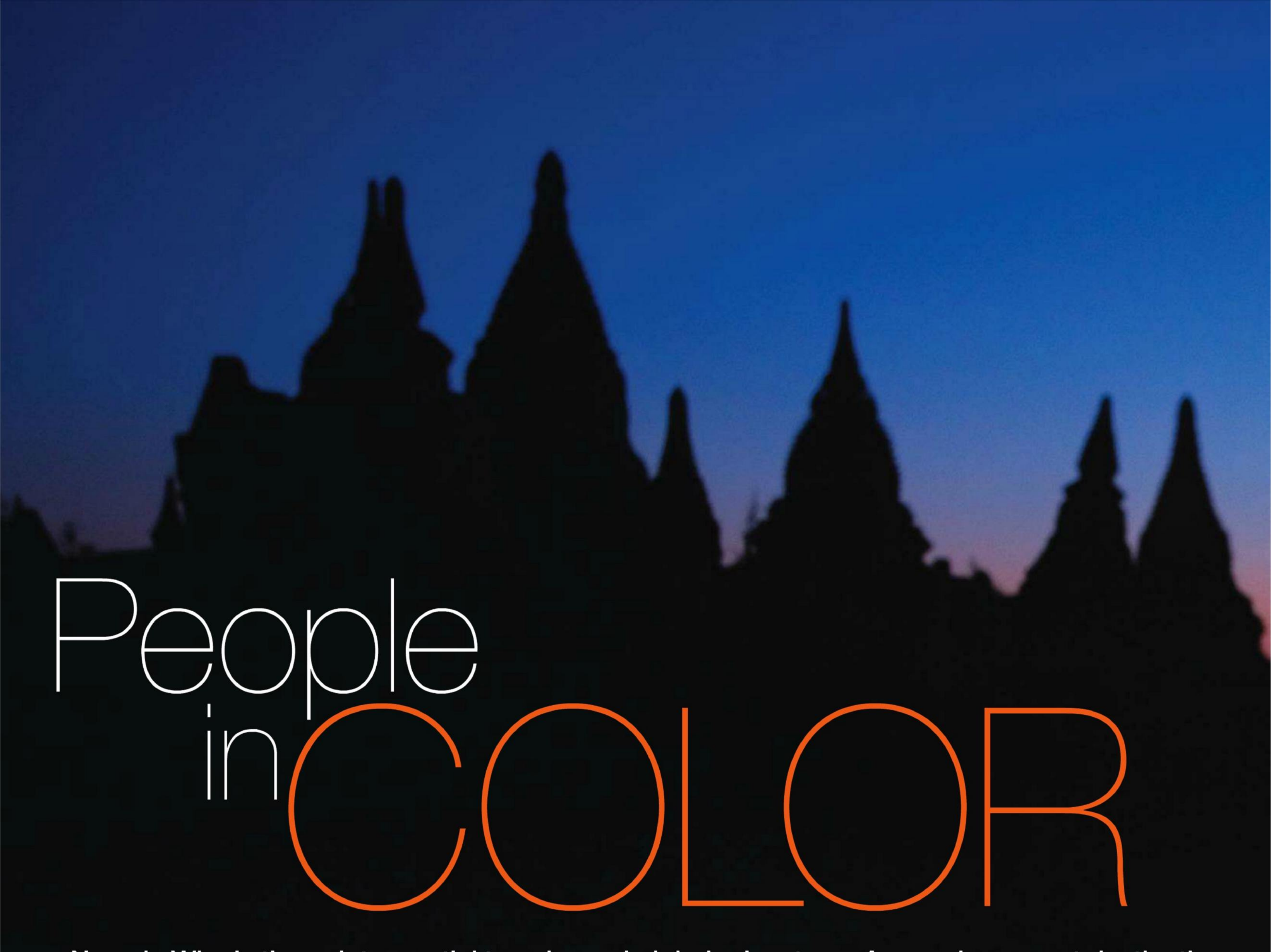


People in COLOR

Nevada Wier is the quintessential traveler and global adventurer. Among her recent destinations

By Brian Davis / Photography By Nevada Wier

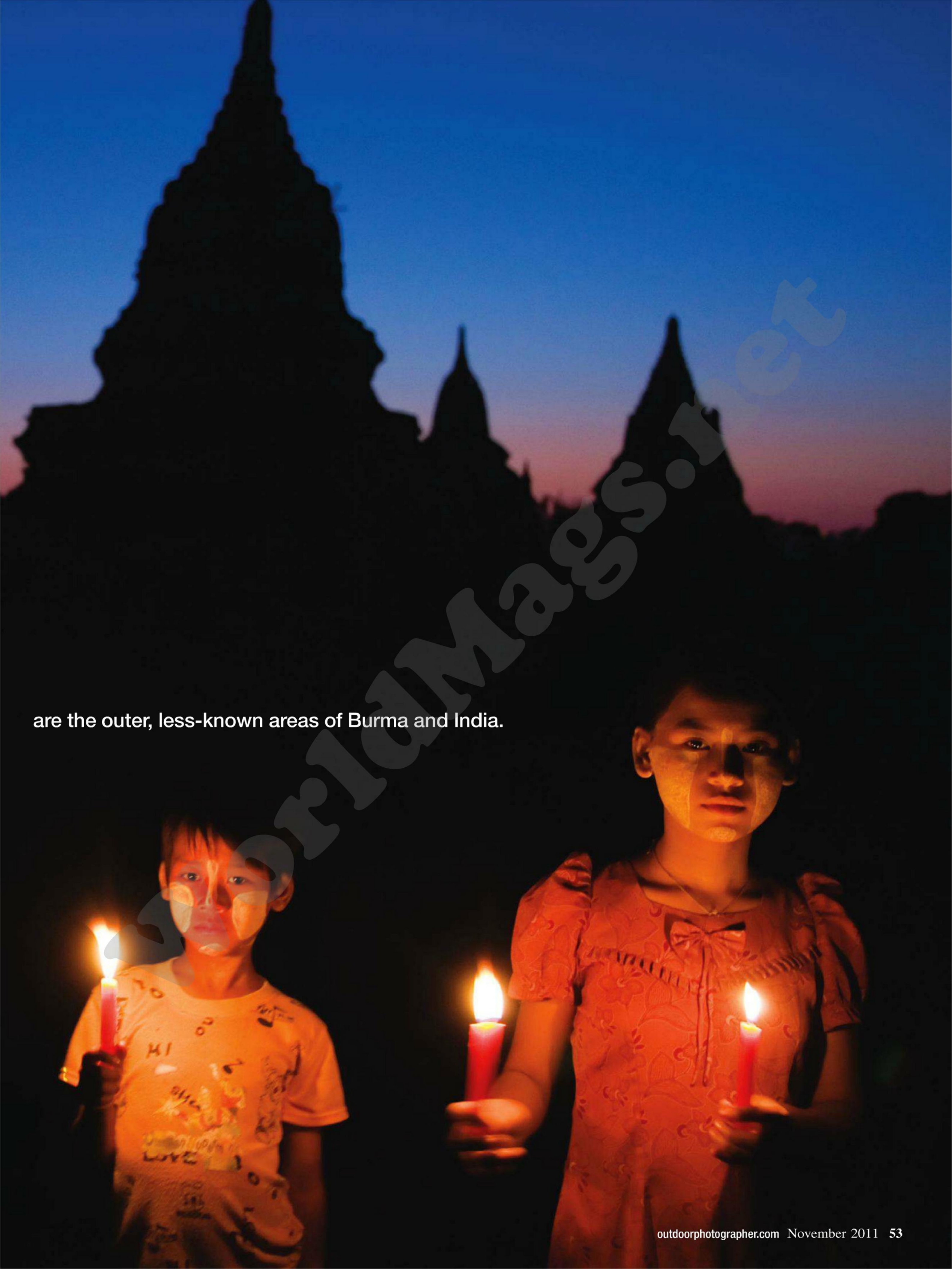
In the last decade, with the nation enthralled in two wars, combat photojournalism and photojournalists have woven their way into the day-to-day fabric of all of our lives. Today, the most common images from around the world come from photographers whose lenses are focused on cultures at war.

Nevada Wier, too, has worked her away around the globe, but in pursuit of another kind of image. "I'm addicted to travel." She pauses and retells how, as she picked up a camera, she had to make a choice, "I considered being a current-events photographer, but I wanted to seek broader themes. I'm more drawn to what's beautiful in the world."

Wier is a self-taught photographer, an Outward Bound instructor and the product of a liberal (very liberal) arts education. Mix these elements with a name like Nevada, and she was almost destined to be an acclaimed travel photographer. She's spent some three decades establishing a unique eye and a gift for taking us, as viewers, all over the world. Today, she's acclaimed for her images from India, which go against popular perception and are rich with artistry and vision. But an artist isn't an engineer, working from a plan to strict specifications.

Beginnings

The adventure began with Wier's first international trip, an ambitious journey to Bolivia in 1978. Being an experienced outdoor guide, earning the cred in the pristine western wilderness of Arizona and New Mexico, she ventured to Lake Titicaca where she circumnavigated the lake in a reed boat for three-and-a-half months. Thor Heyerdahl crossed the Pacific in his Kon-Tiki in the time it took Nevada and a friend to wrap around the lake—albeit, a large lake—in a similar craft.



are the outer, less-known areas of Burma and India.

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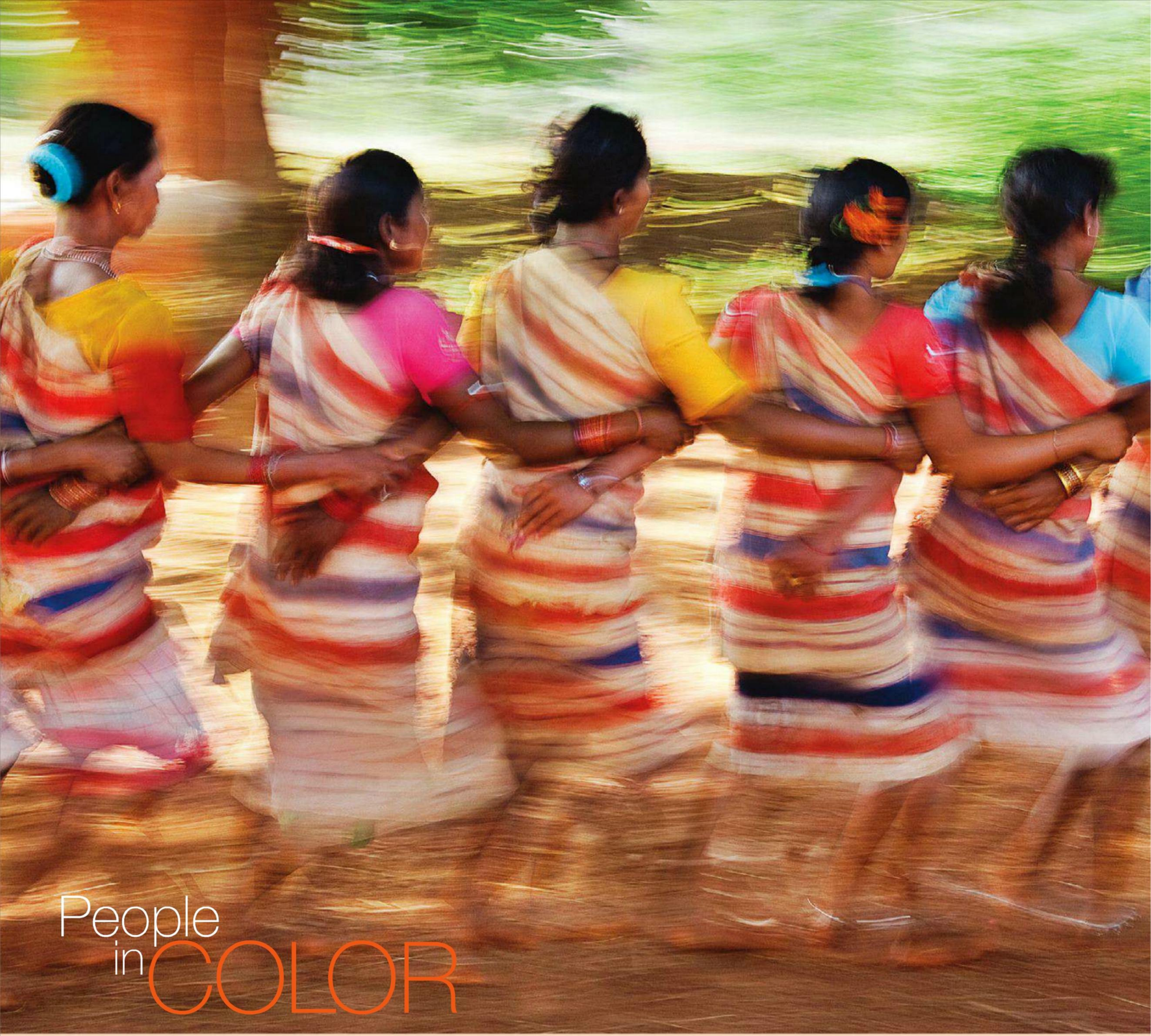
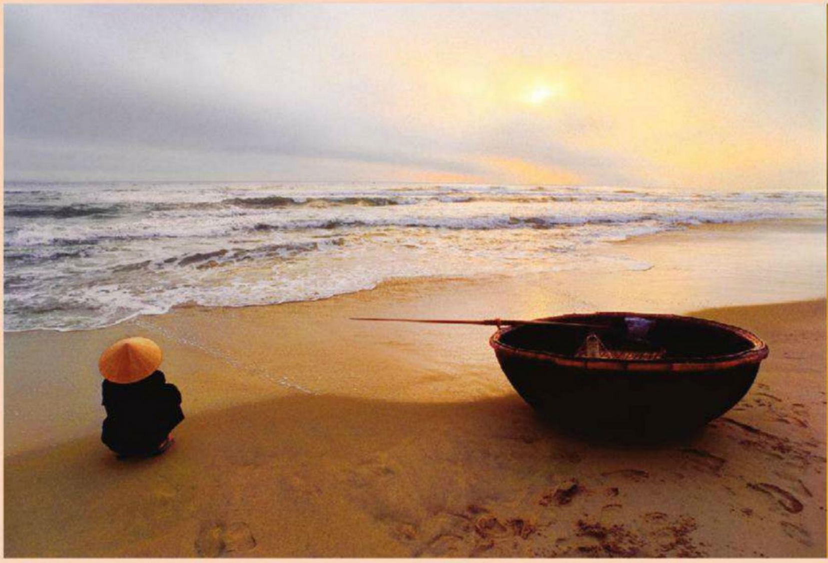


People in COLOR

***OPENING SPREAD:** Young girls with candles at Kay Min Ga Temple, Bagan, Burma. **ABOVE:** Godaba Tribe performing the Dhemsa Dance, Kangrapada Village, Chattisgarh, India. **NEAR RIGHT:** Woman with coracle boat, China Beach, Danang, Vietnam. **MIDDLE:** Laundry at the lake, Bharwad Tribe, Ambala Village, Little Rann of Kutch, Gujarat, India. **FAR RIGHT:** Villagers coming to worship at a buddhist floating pagoda, Maung Kan Village, Chindwin River, Burma.*



The epic boating adventure came after her planned climbing trip was stymied by aggressive customs officers who seized the group's crampons after a *golpe* led to political instability and weary security forces.

Say Wier, "I like having Plan A and going through with Plan Q. I think that's very helpful to photography." Clearly, she wasn't going to settle for the well-beaten path and resort hotels many of us use as the base camp for our own adventures.

But the career started with that Outward Bound program and a makeshift darkroom setup in the office. "If I could go back to any time in my life, that would be it," Wier reminisces.

Equipped with a Mamiya 645 and a Nikon, she'd trek out during the day—with tours or alone—and begin capturing Nepal on film. "I realized very quickly what was at the bottom of the mountains was more interesting than at the top," she says. "There's nothing at the top except a good view. At the bottom there were all these people and all these trails."

Perhaps it's because her home amid the beautiful landscapes of the American Southwest has saturated her psyche with images of rocks and trees and streams, but Wier isn't into setting up her tripod to catch a slope of green as it descends into valleys below or puffy clouds dotting an azure sky. You'll see very few landscapes—perhaps one or two from Nepal—among her selected images because Wier captures people instead. Faces, smirks and that little reflection off a cornea—these are her dramatic vistas.

Explains Wier, "I photograph people. I really like people—occasionally a tree or two—but mostly people. I realized, forget trying to go to places where there are no people—and there are people everywhere. And I fell in love with indigenous cultures."

So Wier traveled to see people almost everywhere, from South America to Africa, but she has spent most of her time in Asia.

Asia And India

It's in Asia that Nevada Wier has left her biggest mark or, rather, had the biggest mark left on her. She started with that single camera in Nepal and ventured across the region. Her first trip to Myanmar in 1986, when it was still known popularly as Burma, has resulted in a nearly annual journey for 25 years. Working on a long-term project, she hopes to bring the story of what the Burmese have endured as pressure on the ruling junta and international attention escalate.

Even though Wier lives in the United States, in her travels, Asia operates as her home base. She keeps a home in New Mexico, but half-packed suitcases and camera bags are like furniture in her house. Her time in recent years is spent traveling to the subcontinent, venturing through less-traveled parts of Pakistan and India, jumping through Thailand, Myanmar and China. The stories are intense and humbling; the images are surreal, vivid and, at times, haunting.

Recently, Wier has focused on India and, specifically, on "Outer India." That was the name of a recent exhibition in which she presents us with a part of India with which most people aren't familiar. The bright red saris, adorned with gold, and waving to beats created by Bollywood-inspired music are missing from Wier's photographs of India, and her striking photos tell a story of a

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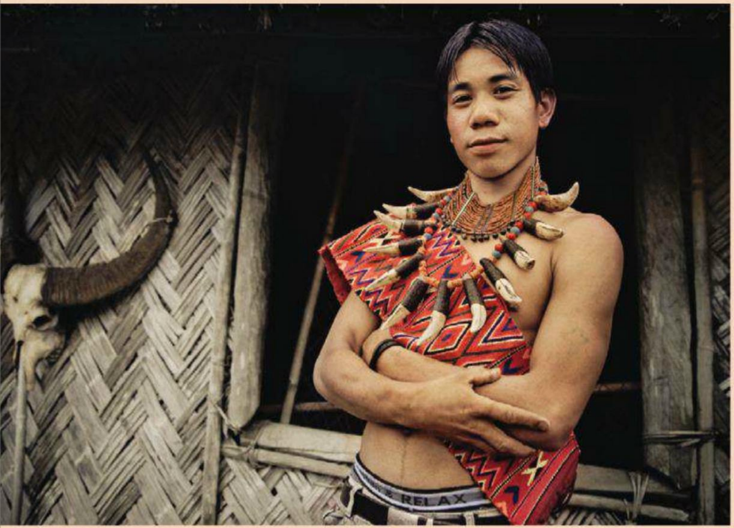
People in COLOR



ABOVE: Wier makes use of any and all technology that will enable her to convey a story of the people she encounters. In Gujurat, India, she works in infrared to create a unique effect that isolates the women as they carry water to their homes. LEFT: Mon Prince Tolei Konyak of the Konyak Naga Tribe, Nagaland, India.

people that hardly seem to be of one single nation. She manipulates and spins color to present an India that you don't see on television or coming from Bollywood. Wier explains, "Photography is purely interpretive, utilizing imperfections as well as the perfect. I'm trying to photograph what I feel as much as what I see."

Exploring Light, Color And Outer India

Wier interprets what she sees into an image—sometimes with light, sometimes with technique, more often, with equipment.

"When you talk about color," she says, "I understand what happens with contrasting light. I know how to render things so they're going to work as an image." Wier is definitely not your average casual observer.

In Outer India, she ventures into new lands with new methods. She has used infrared photography with stunning results. In Nagaland, a part of India as distant from Mumbai as it is distinct, her desaturated photos emphasize the unique culture. Wier celebrates an India that's more tribal and diverse than most Westerners would expect. Mumbai may be the second-most populous city in the world, but many of the one billion Indians don't venture far from their village homes or fall within any singular definition of what is "Indian."

For the Outer India project, Wier captured images and themes you'd never expect. She embraces the juxtaposition of the tribal culture in the modern world—ancient weapons in the hands of tribal children wearing the clothes you'd see at any middle school in the U.S. Her images remind us that it's not an omnipresent Western culture invading these remote areas; it's the global youth culture permeating everything at once.

Says Wier, "It doesn't strike me as odd; those juxtapositions seem very

(Cont'd on page 108)

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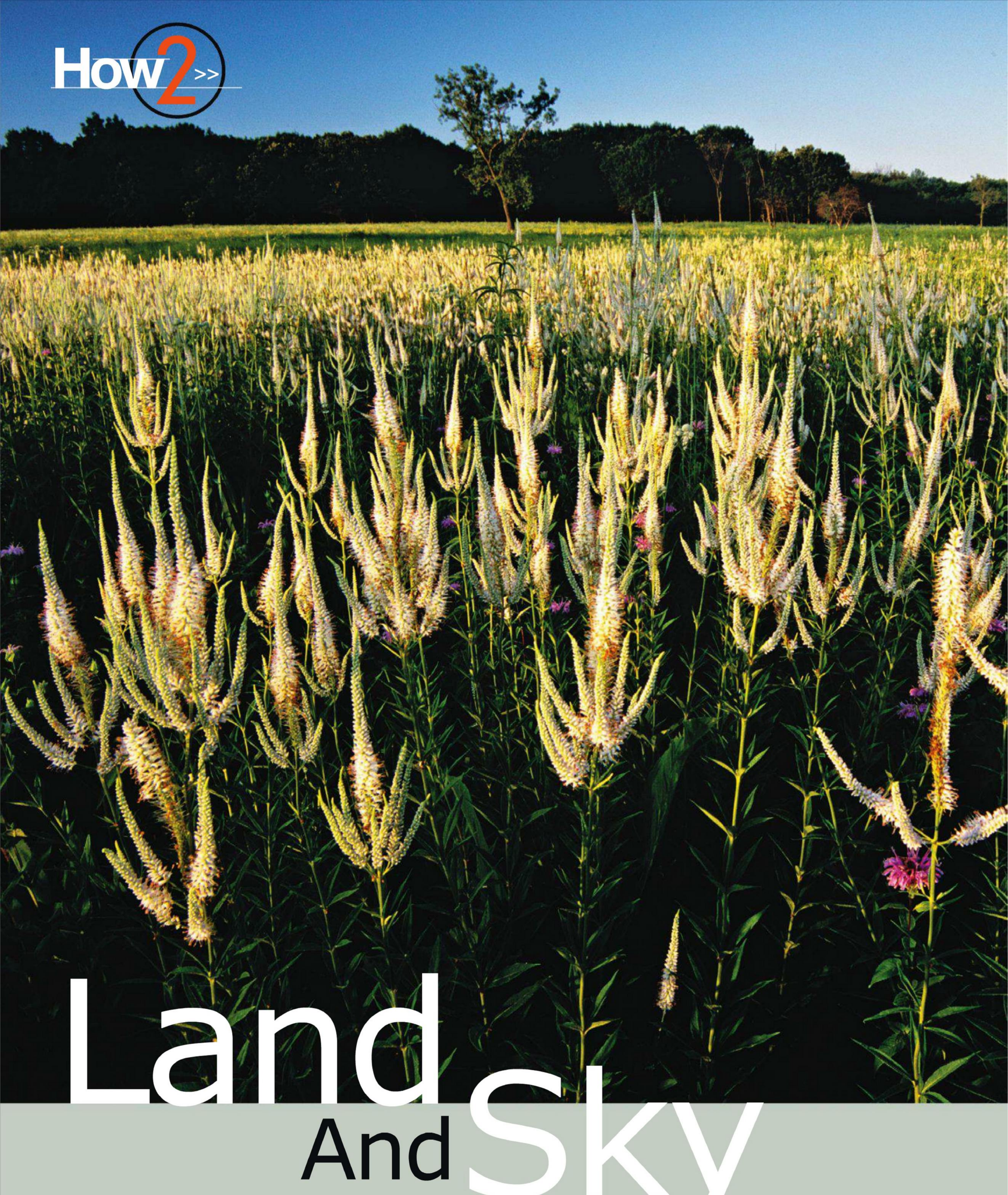

Land And Sky

Tips for getting dramatic photos in the wide-open expanse of the American prairie

Text And Photography By Mike MacDonald

When the beauty of nature and chaos collided, it created the prairie. Virtually endless, extending for hundreds of miles with scarcely a tree, it was reported by many of the first explorers as the most beautiful landscape they had ever seen. Others who first set eyes on the prairie, those who had lived all their lives amongst the dense woodlands of the original 13 colonies, named it "The Barrens" for its starkness, but also because they erroneously thought that the soil was infertile because it couldn't grow trees. There's mention of adventurers who rested with their horses only a few yards off the trail in towering prairie of big bluestem grass and went completely unnoticed by other travelers. The prairie, as it once was, was a celebration of flora and sky. Sadly, those days are long gone, but beautiful remnants still exist throughout the Midwest that give us a glimpse of the past. I photograph the many prairies of the immediate Chicago, Illinois, area.

Unlike the West, which has some extraordinary geology, the prairie is known for its ever-changing displays of wildflowers that continue from mid-spring through early autumn. And after the plants go dormant in late fall, the prairie remains rich with warm hues and textures throughout the winter. Full of color and bursting with life, the prairie is a breathtaking place. But getting photographs that convey the full experience of these vistas can be exasperating.

The ups and downs of a mountain landscape inherently give a perception of depth in the image with little or no effort, but prairies are

ABOVE: Culver's root glows in the light of the morning sun, Wolf Road Prairie, Westchester, Illinois. Using glancing light to make colorful flowers pop out of the landscape is a simple, but effective technique for the broad, flat expanse of the prairie. RIGHT: Prairie blazing star in the fall, Spears Woods, Willow Springs, Illinois. Spring and summer flowers get a lot of attention. Keep going back to spots where you see colorful flowers because in autumn many blooms are transformed into a glowing gold color.

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often flat, and in your picture, even flatter. Suddenly, your three-dimensional world has been collapsed into a pancake. This is the primary challenge.

To further complicate matters, prairies are, by their very nature, diverse and chaotic. Unlike a mountain, no one thing jumps out and screams, "Photograph me!" Creating visual order from chaos is a critical dilemma. To photograph a prairie is to test your true ability as a photographer. Here are some techniques that I use regularly.

Shoot Early In The Morning

1 Thirty minutes before sunrise, plan to be in position with a shot composed to catch the color of the predawn sky. After the colors fade, you should have time to prepare for the moment when first light hits. Evenings provide great light, but that's about it. In the morning, the prairie has personality and atmosphere, with the gifts of fog, dewdrops and spider webs, gently varying light, increased animal activity, the calmest air and no people—an escape from reality.

Chase The "Glancing Light"

2 When the sun is less than 30 minutes above the horizon, low glancing light kisses the tops of flowers and stalks of grasses. Plants, once lost among the beautiful chaos, now leap in the air to express their individuality. Go directly to the sunlit areas of the scene. Completely ignore the shadowed sections. Situate your camera so the rays stream in from the side. Sidelighting combined with delicate highlights and soft shadows will give your subjects shape, form and visual separation, and intensify the perception of depth in your picture. Keep your eyes to the viewfinder and compose for the highlights. Glancing light has the power to transform any subject into a thing of beauty.

Live In The Viewfinder

3 Explore the prairie through your viewfinder by keeping the camera at your side, not stashed away in your backpack. If you "live in the viewfinder," you'll see the world in two dimensions, emulating how the final flat image will be perceived. Viewing the world through the unique perspective of your lens will help you discover compositional possibilities that you wouldn't have found otherwise with your own eyes.

Use "Parallax" To Organize Your Composition

4 To the eye, the prairie is sublime. To the camera, it's pure chaos. The prairie consists of myriad plant life, all competing for your attention. Using Tip 3: Live In The Viewfinder, notice how the flowers move and shift as you move and shift. This effect is known as parallax. Walk around with the camera to your eye and use parallax in search of patterns, shapes and curving or angular lines. Find groupings of flowers or lines of texture to help you organize the composition.

Communicate "Vastness" With A Wide-Angle Lens

5 Most of my prairie shots are made using lenses with focal lengths in the range of 18mm to 35mm

(35mm full-frame equivalent). A wide-angle or superwide-angle lens lets you pack more information into the picture and better expresses the vastness, the endlessness of the prairie.

Shoot Close To Foreground Subjects

6 Wide-angle lenses make objects appear smaller. To compensate, push the lens in close—and I mean close—to foreground flowers to make them look big and detailed. When you think you're close enough, get closer. Back off only when you're clearly too close. I'm talking 8 to 36 inches from the closest subject to the image plane.

Balance Extreme Contrast With A Split Grad Filter

7 Before sunrise or after sunset, when sunlight isn't directly illuminating the prairie, the sky is much brighter than the land. To balance the extreme contrast, use a two- or three-stop split or graduated neutral-density filter to darken the sky and bring its exposure in line with that of the prairie. Trust me, if used correctly in the field, you won't need to use software plug-ins or process the image in Photoshop.

Make Subjects Pop With A Polarizing Filter

8 Glare kills highlights and blinds us from valuable visual information. Polarizers eliminate this glare. In use, polarizing filters are most effective when light is entering the scene perpendicularly to your camera or, in other words, in side-lit situations. Using this filter will darken blue skies, create a more dramatic separation between the land and the sky, and provide better separation and detail in flowers and foliage. It makes a big difference.

Print Large, And Exercise Precision

9 Landscape images are intended to be printed big to give the viewer the experience of being there.

ABOVE, LEFT:* *In the golden light of morning, wild quinine, stiff coreopsis and leadplant overlook a foggy fen, Elgin, Illinois. Early morning is one of the best times to bring out the beauty of the prairie.* *ABOVE, CENTER:* *The morning sun peaks above the horizon to illuminate a large display of foxglove beardtongue, Bluff Spring Fen, Elgin, Illinois. The dramatic, low-angled light lasts only a few minutes, so you often need to get ready in the dark, but the results are worth the effort.* *ABOVE, RIGHT:* *A line of shrubby cinquefoil in its autumn hues curves toward a distant dune where a lone black oak tree stands, Illinois Beach State Park, Zion, Illinois.

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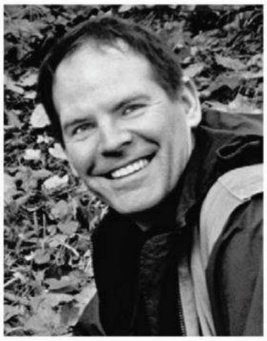
I like 24x30 inches and up. Larger images help communicate details that are minimized by wide-angle lenses, but big prints also show errors in your capture and digital-processing techniques. In the field, use a sturdy tripod and a remote shutter release, and never handhold your split grad in front of your lens; use the filter holder. In the computer, be aware of halos and artifacts resulting from imprecise masks and oversharpening. It helps to feather your selections carefully.

Keep Going Back

10 There are prairies here in the Chicago area that are home to more than 350 forb and grass species. The more prominent displays are usually the most photogenic for landscape photography, with a constant supply starting in mid-May and extending into September. There's so much going on that the secret is to keep going back, week after week, so you don't miss anything. You'll discover new species and be rewarded by unexpected surprises. Keep a calendar so you know when to return next year. **OP**



***Mike MacDonald** makes his home in the Midwest, and he constantly explores, photographs and teaches about the prairie. You can see more of photography and find out about his workshops on his website, chicagonature.com.*

MORE On The Web

The Locations section of OP's website is home to an archive of articles on exciting landscape photographers and nature imagery, as well as OP's Top 100 Iconic Locations. Visit **www.outdoorphotographer.com/locations** to see more!

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ASSIGNME

▶▶ Photo Assignments From The Editor Of *Outdoor Photographer* Magazine

The Black And White Assignment was one of the most popular that we've run, and it attracted some of the best photography. In a previous issue, I published some of the best from that gallery, but due to the limits of space, I wasn't able to publish as many as I would have liked. In this issue, you can see some of the other highlights from that gallery.

There's much more to a good black-and-white image than just converting a good color shot. In the August issue of *Outdoor Photographer*, there were several articles that went into detail about making compelling black-and-whites. Each of the images here are examples of highly graphic black-and-white images. There's a simplicity of form and shape that makes each image jump off the page.

Go to the Assignments section of the *OP* website to see more galleries, comment on images and submit your own photographs. I'll be looking for the best submissions to publish in the magazine, and if you have a suggestion for a good Assignments topic, please send it to me at editors@outdoorphotographer.com.

—Christopher Robinson, Editor

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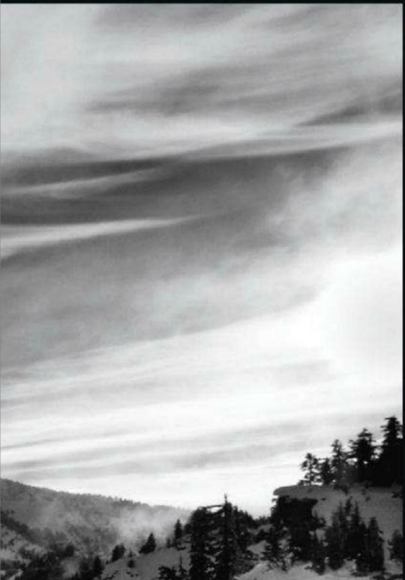

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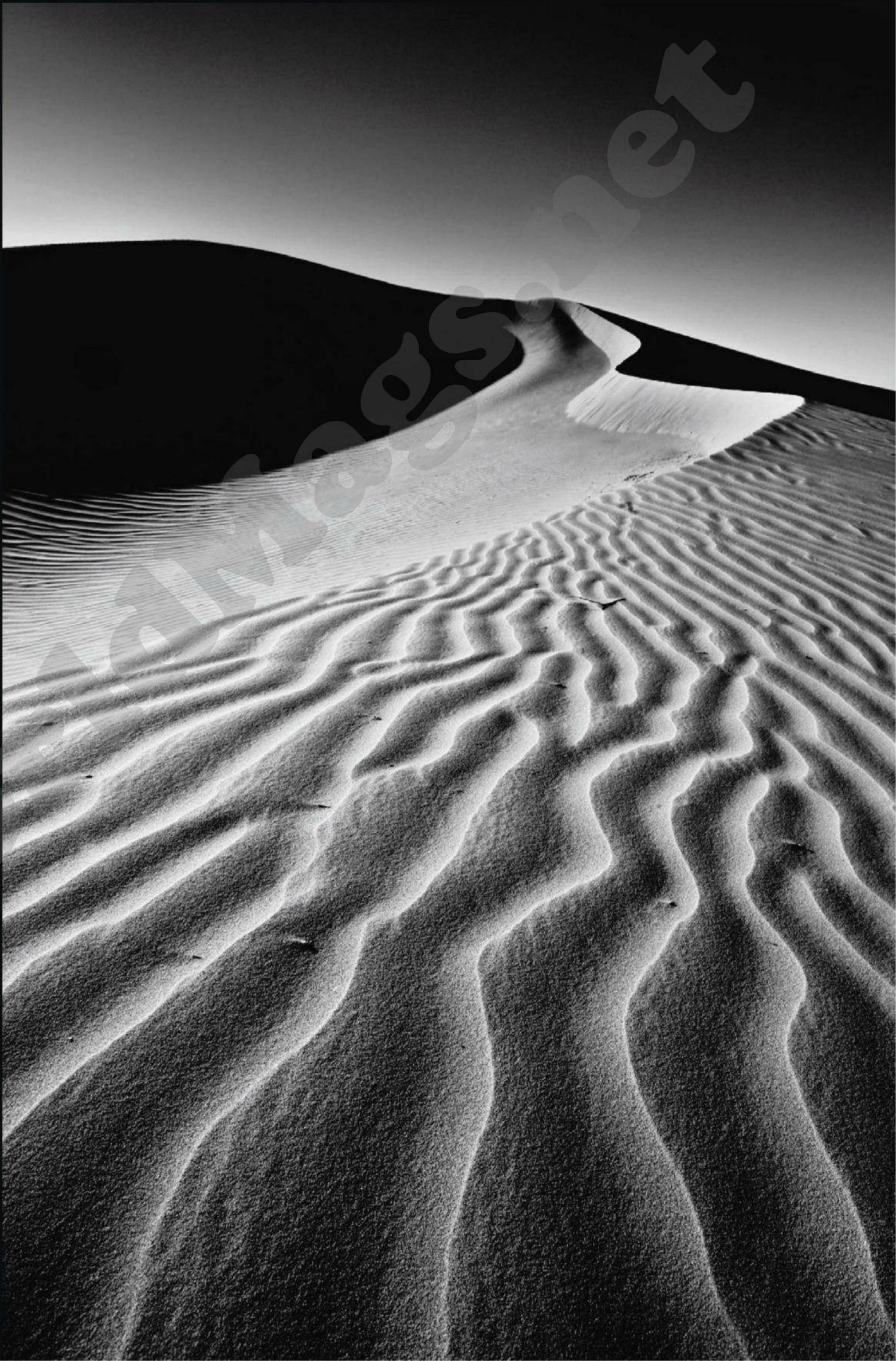

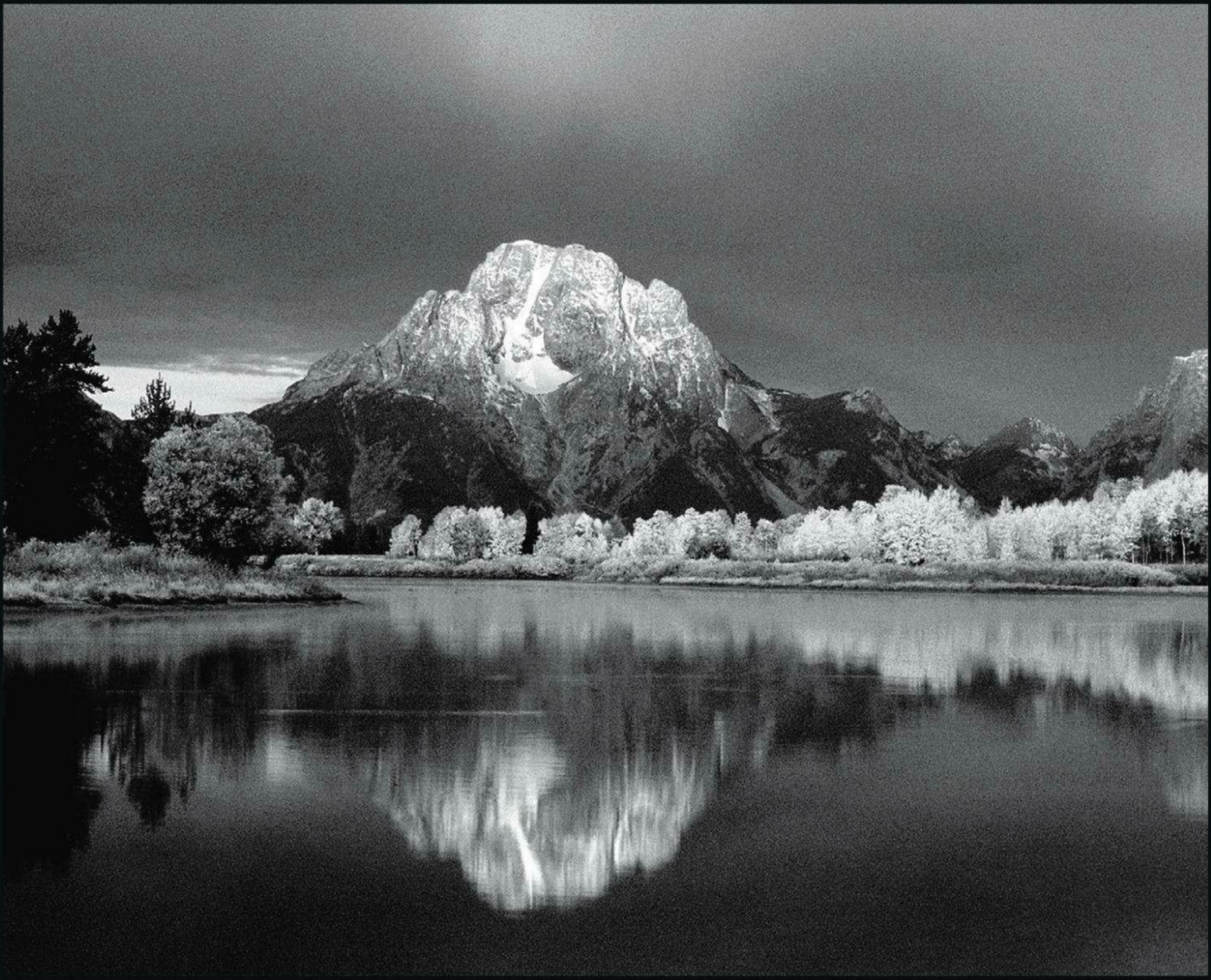

3

1)
PHOTOGRAPHER: Janell N. Cotterman
LOCATION: Crater Lake National Park, Oregon
EQUIPMENT: Canon EOS 40D, Canon EF-S 10-22mm ƒ/3.5-4.5 USM, circular polarizing filter, Rocketfish carbon-fiber tripod

This image was taken while snowshoeing at Crater Lake in January. The morning was cold, with ice covering the trees, and as we snowshoed around the rim, we came to a clearing. I saw the fan-like clouds and the fog rolling over the mountains, and it was beautiful. It's a spectacular and peaceful place to be in the winter, and every view is breathtaking and awe-inspiring. As of June 1, there still was some 115 inches of snow.

2)
PHOTOGRAPHER: Ahmed Mohammed Al-Touqi
LOCATION: Al-Hashman Sands, Oman
EQUIPMENT: Canon EOS 5D, Canon EF 17-40mm ƒ/4.0 L USM, Manfrotto tripod

I took this photo on my first visit to the Al-Hashman Sands, which is part of the vast desert of the Empty Quarter in Oman. It was the end of September 2010, and I was lucky that the weather wasn't too hot. The sands are famous for big, beautiful dunes compared to the other less-impressive sand areas in the country. Getting to Al-Hashman Sands wasn't difficult in a 4x4. This is a very empty landscape, and nothing lives there except a few species that have adapted to the extreme conditions. The distinct shapes make for very graphic images when the light is right.

3)
PHOTOGRAPHER: Jay W. Smith
LOCATION: Oxbow Bend, Grand Teton National Park, Wyoming
EQUIPMENT: Nikon N90S, Fujichrome Velvia film, Manfrotto tripod

This photograph was taken at Oxbow Bend early one October morning in 1996. I had been introduced to the photographic magic of Oxbow Bend the previous summer when attending one of the Great American Photography Workshops, and knew then that I wanted to return to Grand Teton National Park in the fall. On the morning I took this image, the sky was partly cloudy and the air was still. I captured the photo just as the morning sun was peeking through the clouds, brilliantly illuminating the face of Mount Moran.

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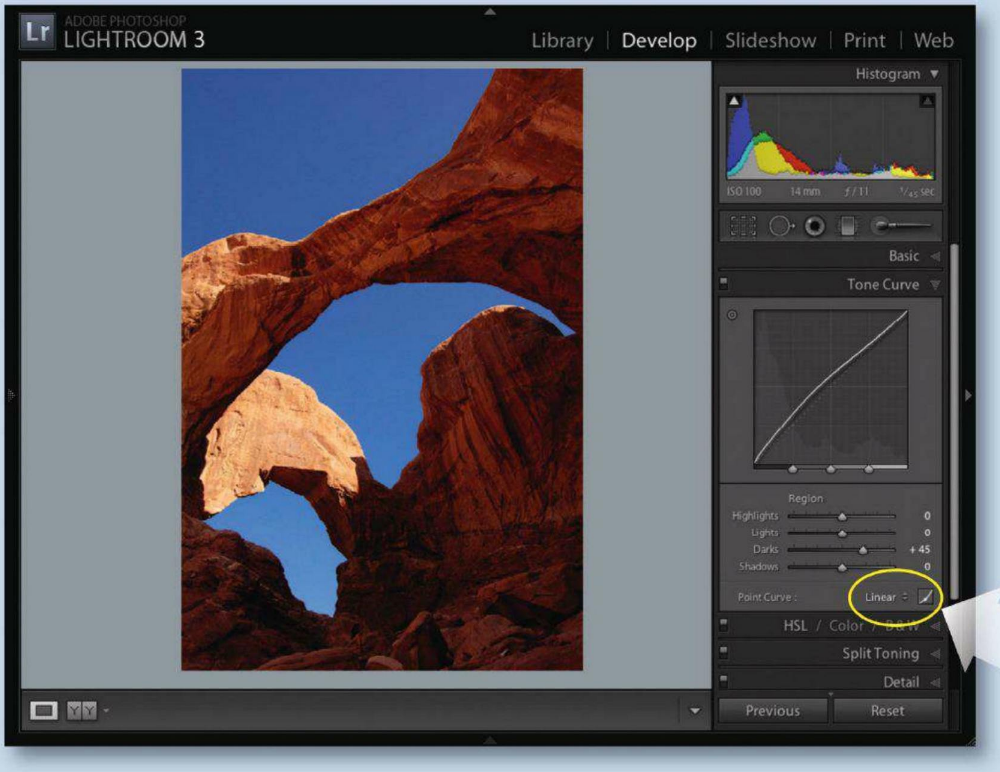
The Dark Secret Of Digital Photography

How the dark side of your photos can be limiting your prints

Text And Photography By Rob Sheppard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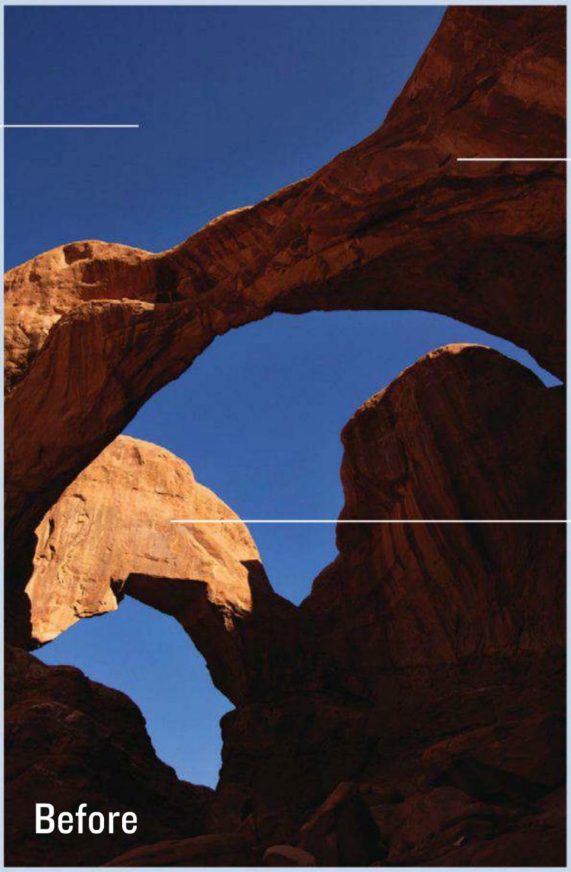
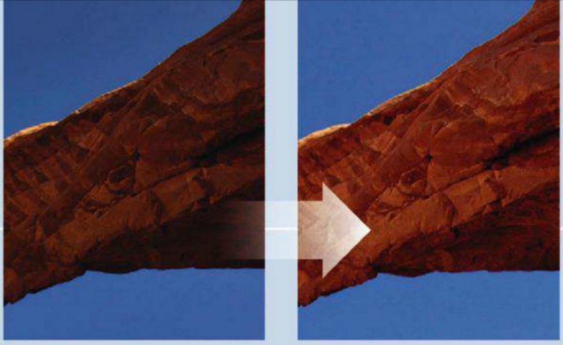
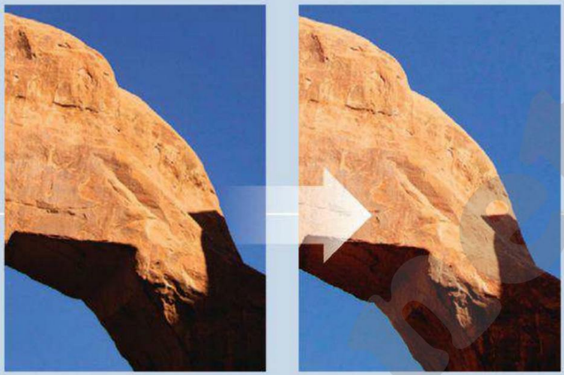
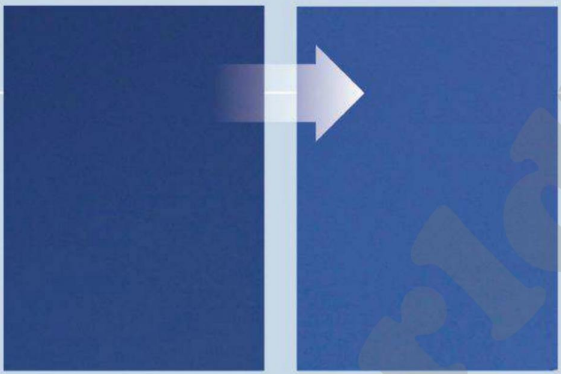
Digital photography vastly expands our opportunities for better pictures. We can now shoot in lower light with higher quality results, instantly see our images as we capture them and easily process those images for the best results. Despite the huge amount of information about digital photography, there's something I've found to be consistently missing—a dark secret of digital photography. This secret element can affect all images, but is most noticeable with photos that include a lot of dark tones and dark colors in them.

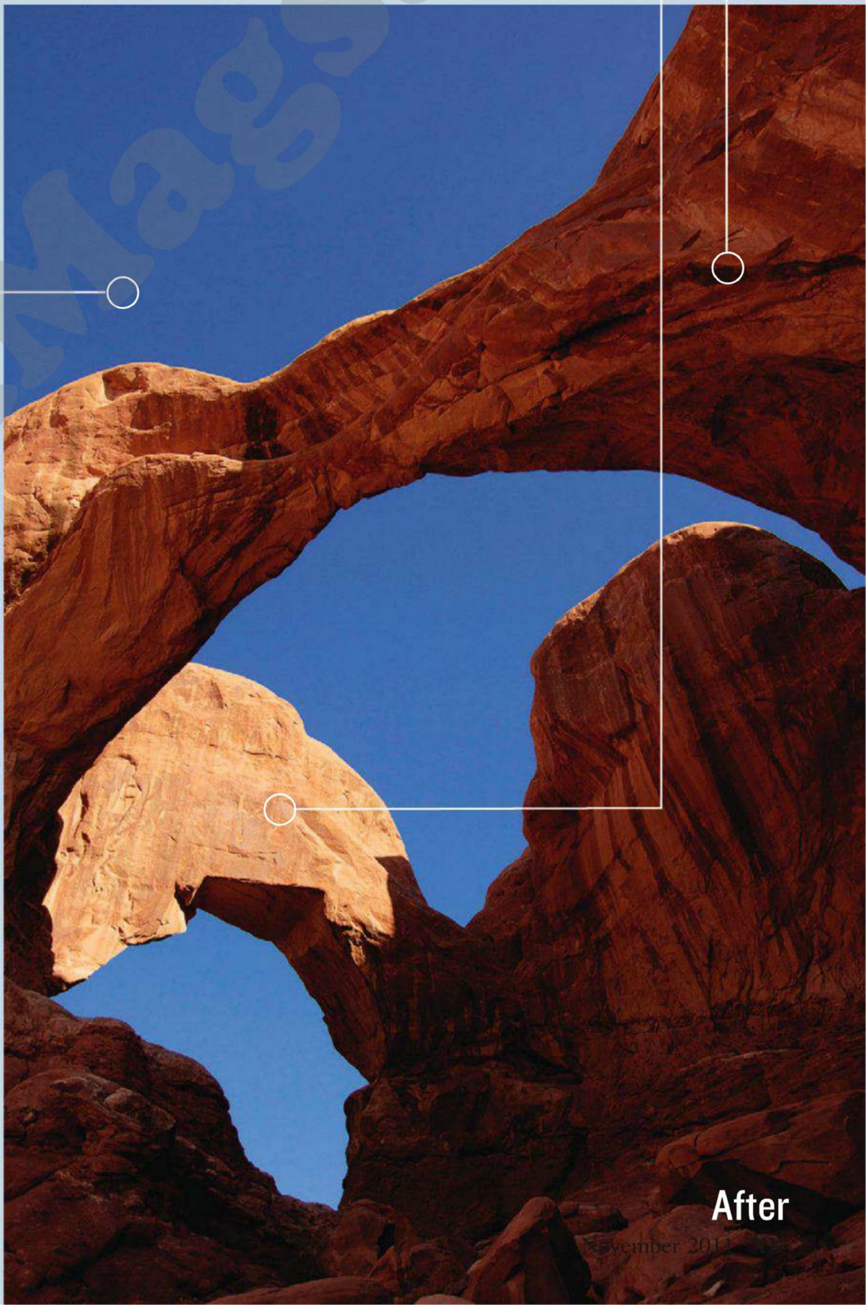
Simply put, digital camera sensors don't do their best work with dark tones and dark colors. The best rendering of brightness values and color quality comes in the sensor's midrange. There are a lot of reasons for this, including the challenge that dark areas simply don't have as much "energy" striking the sensor as bright areas do.











***OPPOSITE PAGE:** Using Adobe Photoshop Lightroom, Sheppard makes adjustments to the dark areas of the image via the Darks slider in the Tone Curve adjustment window. Some will argue that making adjustments on the curve itself is more precise, but the parametric sliders actually do a solid job quickly and intuitively. Other programs like Apple Aperture and Adobe Photoshop also have parametric slider controls that work the same way. Be sure to have the Linear box activated for best results.*

***ABOVE:** When you move the Darks slider, your changes will be strongest in the darker tones where you'll see muddy shadows brought up to show details. The Darks slider will affect lighter areas like the sky and the sunlit area on this natural bridge as well, but the changes become progressively less in these lighter areas.*

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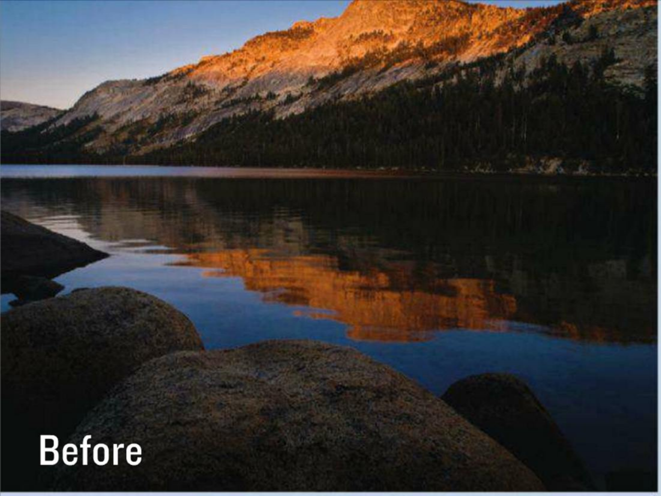
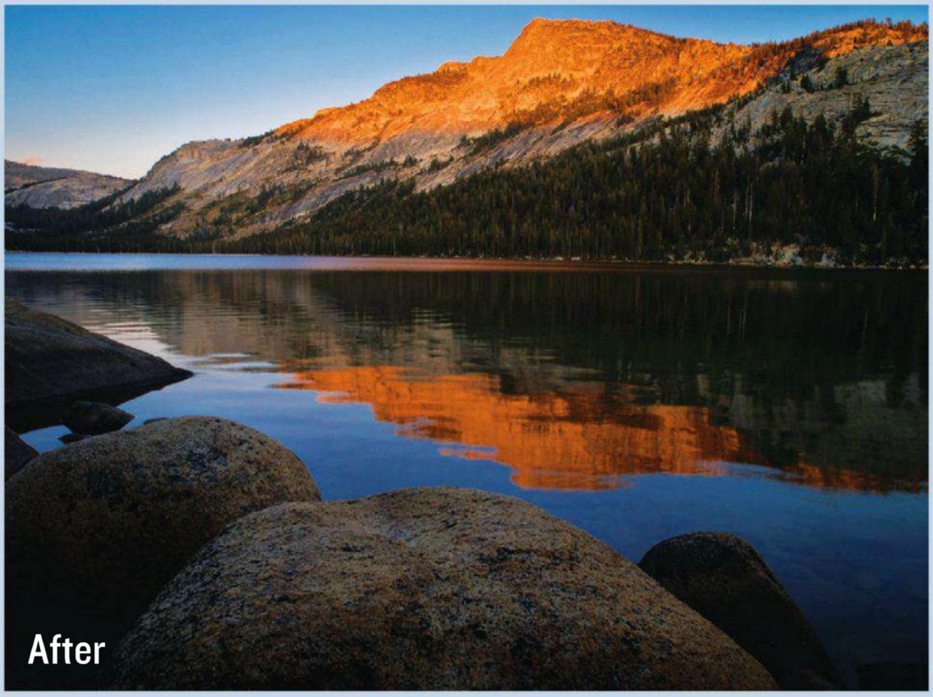


LEFT AND BELOW: The low-angled light of sunrise and sunset creates dramatic landscapes, but you can easily end up with very murky foregrounds like this. Instead of trying to "expose to the right" make a proper exposure in the field and then use your sliders to bring the dark areas up as shown here.



So what happens? When printed, dark parts of photos are rendered murky and muddy in tone and color. That's a problem because it's not how we see the world at all. Much has been written about the fact that the camera sees a fraction of the range of brightness that our eyes can see. That's definitely an issue and a good reason to consider shooting high dynamic range (HDR) photography, but that's not the issue here. I'm talking about the dark tones that the camera does see, parts of a scene where both the sensor and our eyes can see detail.

The problem becomes one of how well the camera sees these tones. Yes, the camera records the tones, colors and detail, but not nearly as well as our eyes. We can easily pick out tonal or brightness differences, even in dark areas of a scene, plus, we can see color equally well in bright and dark parts of a scene. The camera struggles to do that. It definitely doesn't see things equally, even within the range of detail it can handle.

The result is a photo that expresses the midrange to brighter parts of the subject or scene just fine, but the dark areas are out of balance. Their murkiness gives a heavy quality to that part of the composition and drags down the rest of the image. You'll see this on your monitor, but it's much more visible and objectionable in a print.

Some photographers have taken to slightly overexposing images shot in RAW format, often called exposing to the right, to get better detail in the dark areas. Then they process the RAW image back to normal tonality in Lightroom, Adobe Camera Raw or other RAW-processing software.

I'm not crazy about exposing to the right. First, it affects colors in bright areas. The sensor can actually handle brightness that's a little overexposed, except that the chroma or color quality isn't handled well in those bright areas. You often lose subtle colors that can't be brought back by any work in Lightroom or Camera Raw. For some subjects, such as outdoor scenes with bright colors in the sky, that can be a serious problem. Second, it can add significantly to the workflow and increase time you must spend processing images, and time spent

How (And Why) To Set Your Black Point

Digital cameras don't automatically give you an image with the best blacks. There are a number of reasons for this, though it partly has to do with lifting dark tones in a digital file because digital cameras can have trouble there. When blacks (meaning all the areas of pure black) in a photo aren't black, an image won't print or display with the best contrast, tonality or color. While some images won't have blacks (such as a foggy day), most do and need them in the photo.

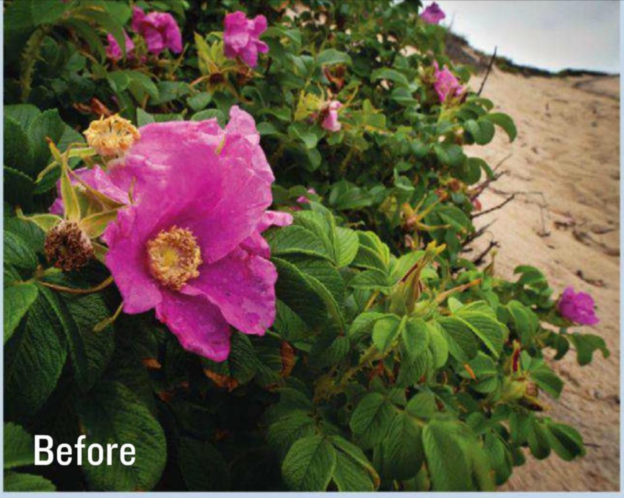
Setting blacks is very visual with Adobe products. Start with the left, black slider of Levels in Photoshop products. For Lightroom and Camera Raw, use the Blacks slider in Basic. **Important: Hold down Alt or Option as you click and move the slider.**

The Blacks Threshold screen will appear, showing pure blacks against white when you get a pure black. Maxed-out color channels on the dark end appear as colors. You usually want at least some black to show up. If your image is filled with color, this might mean adjusting until areas of color show up.

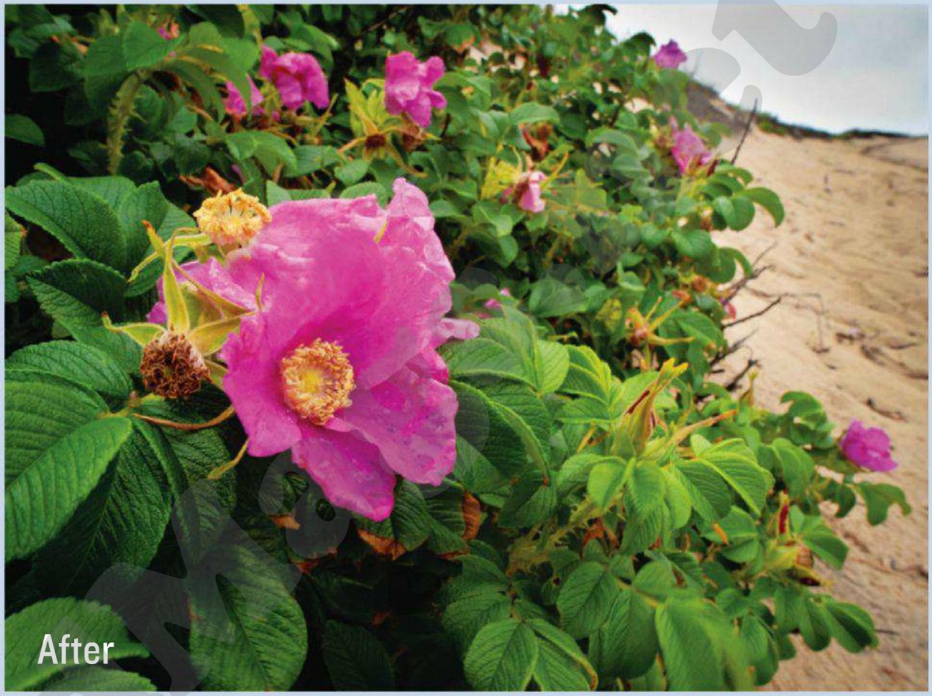
A pure white screen means you're not using the entire range of tonality an image is capable of for most media. Use Fill Light to open dark areas slightly, but mainly use the Tone Curve.

Check your whites. With Adobe products, use the Alt or Option key with the white or right slider in Levels for Photoshop or the Exposure slider in Lightroom or Camera Raw to see a Whites Threshold screen. Usually, you barely want a white or color to show. I find that you have to be especially careful with Lightroom doing this, and sometimes seeing the whites in the Threshold screen goes too far.

Never use the black or white eyedropper in Levels if you're a nature photographer. That will remove important color casts that are usually a key part of outdoor images; plus, the eyedroppers adjustment is very heavy-handed. Seeing the blacks and whites with a Threshold screen is much better.



LEFT AND BELOW: When you use the technique of proper exposure combined with moving the Darks slider, one of the key advantages is a preservation of the color information. If you try to bring out dark areas by overexposing the image when you capture it, you'll lose subtle color data that can't be recovered.



struggling with an image in the computer is better spent outside shooting.

So what can you do? Lightroom and Camera Raw both have a simple solution—move the Darks slider of the Tone Curve to the right. Even if you know and use the Tone Curve as a point curve, i.e., clicking and dragging points on it directly, it's so easy and quick to use the parametric sliders (Highlights, Lights, Darks, Shadows) that it's really worth checking out.

And for the dark secret of digital photography, a simple use of the Darks slider does work. I find that for most photos I shoot that include dark areas in the composition, I can open up those areas, reveal detail, and give them more guts and strength, yet without making these areas too bright, just by moving the slider to the right. How much totally depends on the photo, but typically, I find most digital images need 20-40 points of adjustment.

This is important—you're not trying to make the dark areas bright! You're only working to bring their brightness values up a notch so the colors and tones display properly in an image. You're trying to gain some liveliness and strength to these areas so they don't look muddy and murky.

One thing to watch out for is the Point Curve setting for the Tone Curve. Lightroom and Camera Raw use Medium Contrast as the default for the Tone Curve. I think this is a mistake. Yes, the Medium option does make for a snappier image, but it also usually makes the dark tones less clear. That could sort of be considered a solution to the darks dilemma—it can make them dark enough that you can't see any tones or colors there, so you don't care! But for most outdoor photography, that isn't a good solution.

So I change the Point Curve setting to Linear. That immediately helps bring out the dark tones better. This will make your photo look "grayer," but with the proper use of the Blacks slider in Basic, and sometimes a little help from the Shadows slider, you'll get both more tones and colors with a good-looking image.

Much of the time, the Darks slider is all you need. Sometimes you need to add some Shadow adjustment, but this isn't an automatic, more or less. Sometimes it helps to increase the Shadow adjustment to bring out darker tones; sometimes it helps to decrease that adjustment to put a little contrast in the dark parts of your photo.

You may be wondering, what about Fill Light? Fill Light is an important slider just above Blacks. It helps bring out the darkest detail in the image. However, you have to be very careful in using it. As you increase its setting, the image can start to have an unnatural-looking balance of dark tones because the darkest tones get too bright before the less dark tones do. In addition, Darks does a better job of bringing out the best of all dark tones and colors with a nice blending among them for a more natural look.

Another option is judicious use of the Adjustment Brush in Lightroom and Camera Raw. I find it works best, when lightening dark areas, to set it to plus Exposure. I'll usually set it too high to start so I can better see the adjustment as it's painted on. Then I tone it back to a normal level when done.

Great darkroom workers used to talk about luminosity in a print. This referred to how lively the tones looked throughout the image, from dark to light. This is definitely possible with digital images, but the straight-from-the-camera image rarely will give you this. Just a little effort working on that image to clear up the dark tones can make a big difference in the final photo. **OP**

*You can see more of **Rob Sheppard**'s photography, find his book and learn about his workshops on his website, robsheppardphoto.com.*

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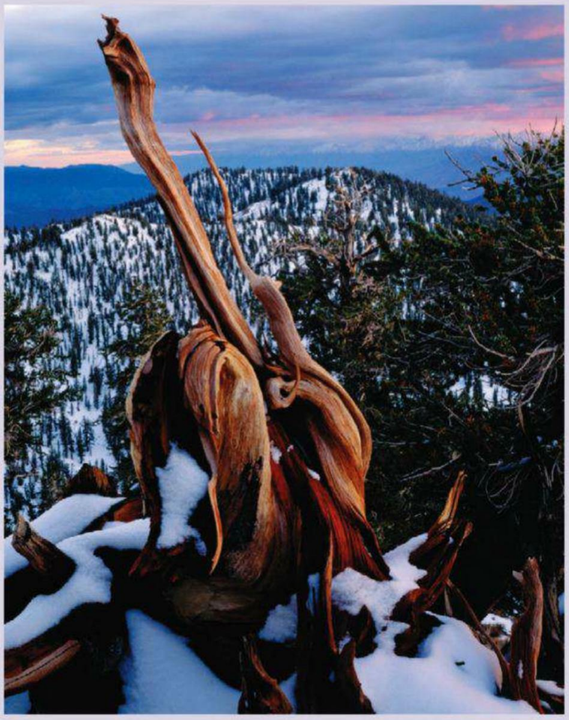

What does it mean to be a photographer with purpose? The challenge of making that next image to be proud of, not to mention the warm glow of accomplishment that follows, can be meaningful enough for a lifetime of photography. After a while, however, some passionate photographers start to wonder about the point of producing and accumulating images, and they begin to crave purpose in their work.

As a boy, I just liked the view through my father's camera. Investigating the world through the viewfinder frame encouraged a greater appreciation of the things that interested me. As I began to learn about photography, it was the moods and emotions that photographs can evoke through tonality and contrast that most excited me. I spent hours at a wobbly enlarger in my school's darkroom trying to make prints that yielded the rich qualities of tone that I saw in the work of 20th-century masters. Early in my career, I found myself photographing mostly to serve the needs of the market and began to realize that I was still trying to find my own voice and deeper meaning and purpose for my work.

Photographing With Purpose

By creating more meaningful work, you can find greater focus and develop a stronger voice, leading to deeper satisfaction and growth as a photographer

Text And Photography By Justin Black

Outdoor Photographer And The Environment

Three years working with Galen Rowell changed all that. Overflowing with purpose, Galen seemed to anticipate an application and audience for every image. Even making very personal photographs, he always had in mind that *this* image would illustrate a point in a lecture, *that* image would help advance the agenda of a conservation campaign and yet another would make a perfect cover for *Outdoor Photographer*. By keeping a mental list of ongoing thematic projects and potential applications for images, he had a ready source of conceptual and creative inspiration. The purposes he kept in mind helped him to routinely seek out and make photographs that had a point and carried a message, rather than simply being pretty. As I adopted this approach, I found that my personal work became stronger and far more satisfying to create.

Pros have obvious business motives for keeping purpose in mind as they work, but it also keeps the creative juices flowing by setting goals that force them to push limits and tackle challenges in which they otherwise may not engage on their own. Amateur photographers can create a similar artist-client scenario by taking on projects on behalf of causes they wish to support, such as a local conservation organization. Of course, anyone can create his or her own set of goals for a body of work, and the amateur has the luxury of serving personal interests alone, rather than the whims of a particular client or market.

Start with your passions. If you have trouble defining specific subjects or themes that you're truly passionate about, make a list of the sorts of things you tend to be drawn to photographing. Then, take a moment to honestly reflect on why you're drawn to each one. Perhaps some will appeal to you because you saw another photographer's great photos of that subject and you'd like to make comparable images. Sufficient motivation though it is, to find a truly meaningful purpose, you may want to dig deeper to find your own voice. A few of the subjects on your list ultimately will reveal a more personal calling that transcends photography—things you're absolutely fascinated with and care about deeply, regardless of whether you've seen good photographs of them or not.

Next, pick apart each candidate subject, thinking of ways to capture images that follow a theme and tell a story. You may want to make a storyboard, sketching rough compositions of opportunities you anticipate may come together under

***OPENING SPREAD, LEFT:* A snow-covered bristlecone snag in the Schulman Grove, Inyo National Forest, White Mountains, California. The bristlecones are ancient trees that are under assault from climate change.**

***OPENING SPREAD, RIGHT:* First light on a cloud over the Owens River near Bishop, California. The Owens River, the Owens River Valley and the City of Los Angeles have been the central figures over nearly a century of water rights and environmental issues.**

***LEFT:* Wind-driven waves and tufa towers, Mono Lake, Eastern Sierra, California.**

***FOLLOWING PAGE:* Cenote Dzul-Ha, Sotuta de Peon, Yucatán, México.**

reasonably foreseeable conditions. Then, think through each image you've previsualized in the storyboard and determine what conditions would need to be present, what preparations you need to make and how to be in position at the right time to make that image the best it can be.

For example, for a project on pollination, you may want to photograph a sphinx moth hovering to feed from a night-blooming cereus. You'll have to make sure you're in position on the one night each year when the bloom opens and ready to capture the moment when a moth zooms in. If you want to photograph a leopard seal chasing a penguin, you could plan to wait beside the spot where the penguins like to leap from the water to the ice and the seal eventually would come to you as the penguin speeds past. When I recently

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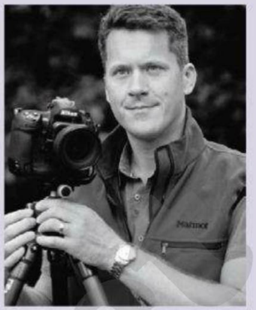
collaborated with my friends Jack Dykinga and Alfredo Medina on an assignment to photograph crystal-clear subterranean pools, or cenotes, in the Yucatán for an International League of Conservation Photographers project, we determined that we'd need to bring along portable lighting, including underwater strobes, to do the job right. Thinking through and planning for numerous variables in advance can make a seemingly impossible shot relatively easy to execute.

Assuming that you plan to share your work with others, it's important to keep the applications and outlets for your images in mind. A photographer creating a body of work specifically intended to be fine art may take a very different approach than he or she would if the priority were to produce a photojournalistic essay that tells a flowing story from opening shot to conclusion. Will you need to make wall-filling display prints for a gallery show? Have you considered the needs and preferences of an editor to whom you wish to submit your work? Rather than throwing a hodgepodge of favorite images into your online gallery, consider editing sets of images according to theme. Photographing with the specific aim of creating a custom photo book about the birds that migrate through a local wetlands or creating a set of prints of square-format black-and-white Tuscan landscapes will help focus how you plan and create your work.

As you pursue your projects, periodically review and critique not just your images, but also your planning and preparation process. Compare your results to what you had hoped to do, and think about ways to apply what you learn from each situation. Constructive critique by experts you respect can be invaluable, as can group critiques with other passionate photographers. Spanning the process from research, planning, execution and review, a great deal of learning takes place, which is a worthy purpose in itself.

Born from a decade of photo workshop instruction and a career as a photographer advocate, my passion for aiding the advancement of serious photographers led me to establish Visionary Wild, a photo workshops and expeditions company providing mentorship and fieldwork experiences for passionate photographers who seek a high standard of instruction, thorough logistical planning and an overall experience that exceeds expectations. Our instructors include such luminaries as Jack Dykinga, John Shaw, Annie Griffiths, Jeff Foott, Karen Kasmauski and others selected not as much for their impeccable credentials and notoriety as for their depth of expertise and demonstrated track records as thoughtful, generous and gregarious teachers. Our programs include insightful, inspiring instruction on bringing purpose to one's photography, and we even connect our workshop participants directly with exhibitions at important galleries and opportunities to apply their photographs to conservation campaigns and other worthy causes.

Regardless of the source of your inspiration, embracing purpose in your photography will lead you to develop personal projects with goals and plans for execution, which in turn will guide the process of creating cohesive bodies of work that reflect your passions, original vision and creative voice. Whether your aim is to publish your work, mount an exhibition, help save an important ecosystem or simply post online to share with friends, photographing with purpose leads to tremendous empowerment, growth, meaning and satisfaction. **OP**



***Justin Black** is cofounder of Visionary Wild, a photographic mentorship and experiences provider offering workshops and travel for the passionate photographer. Visit www.visionarywild.com.*

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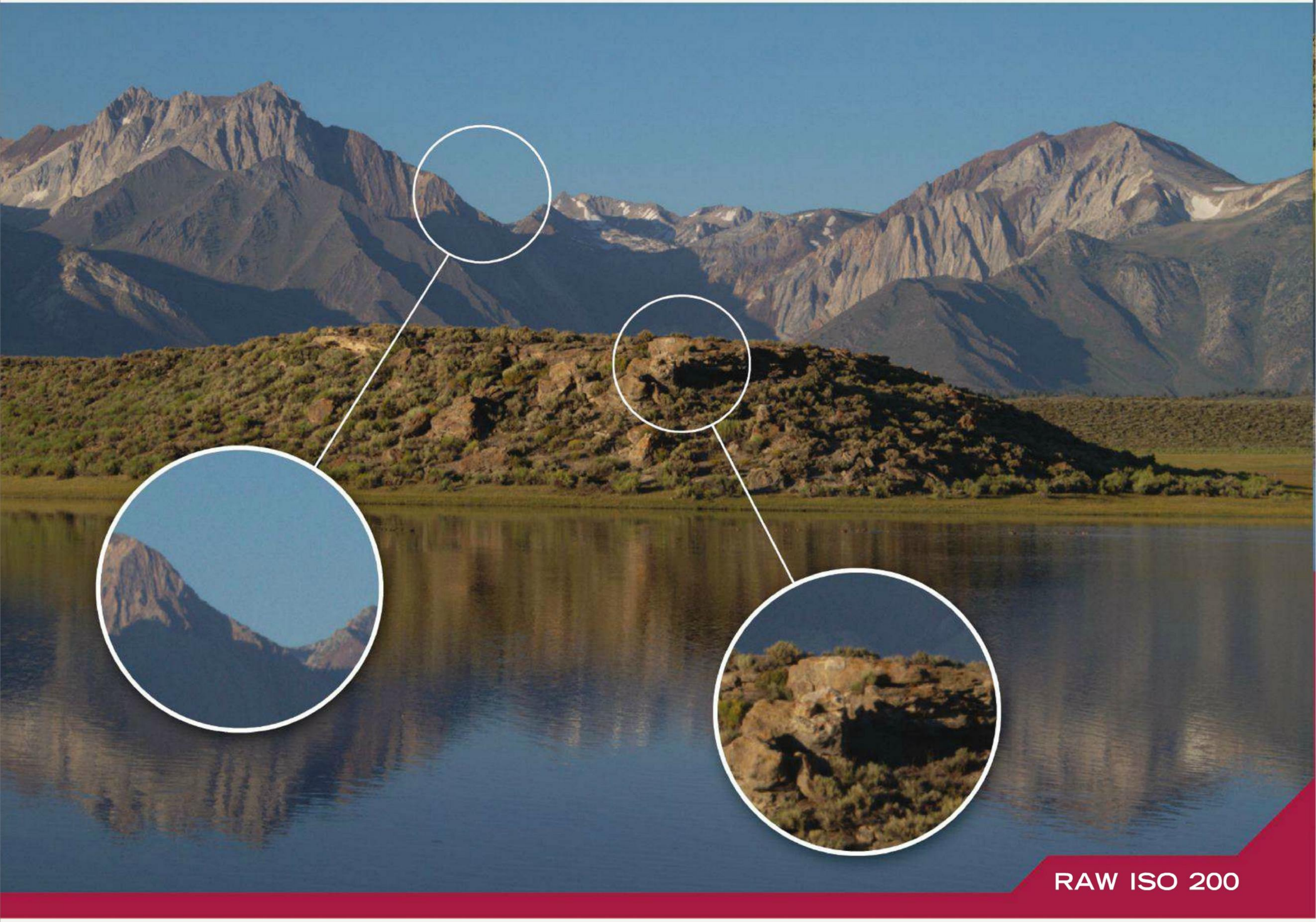
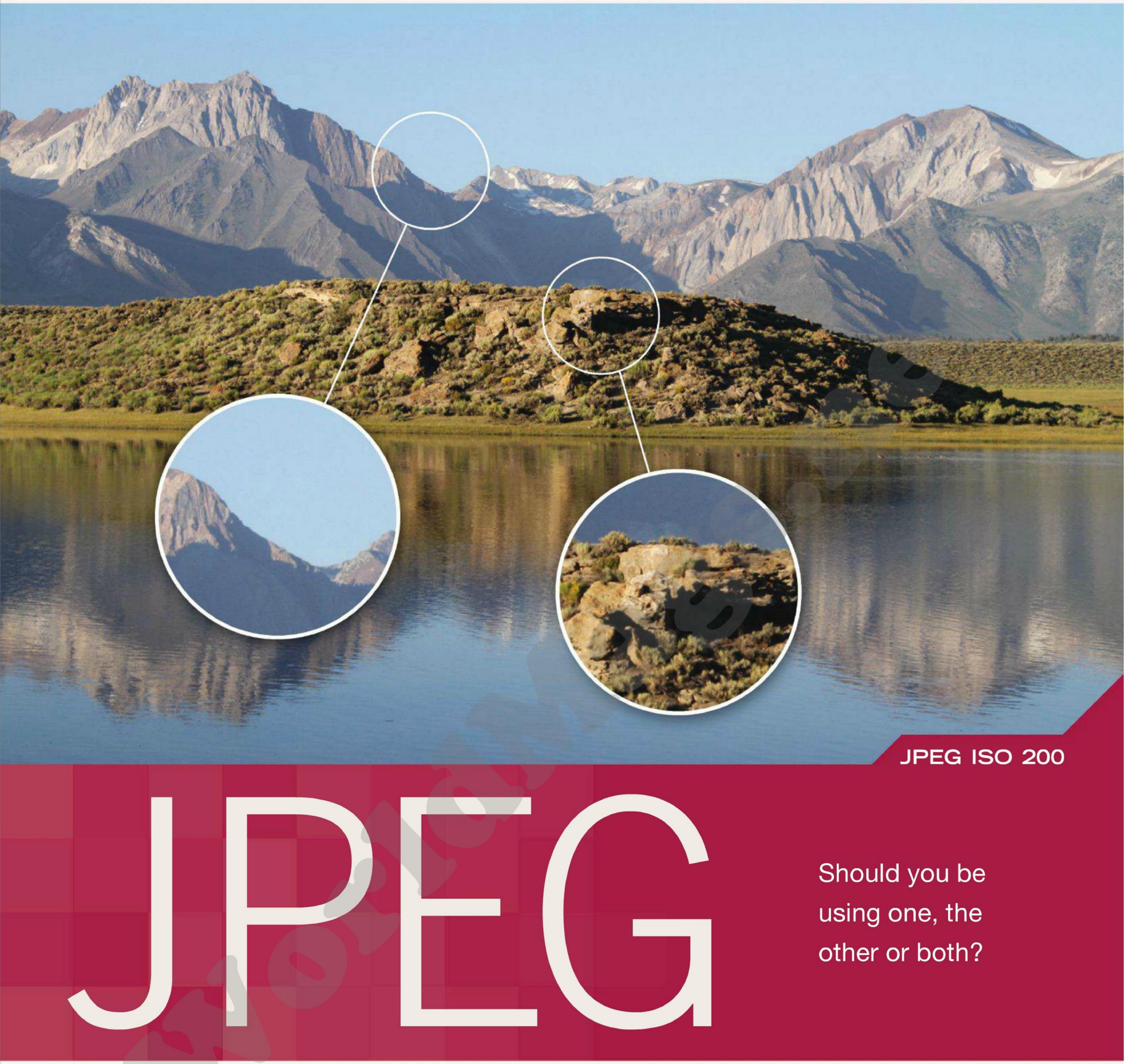


RAW ISO 200

Is there still a reason to discuss RAW versus JPEG? In the earlier days of digital there was a raging debate, but today memory cards are big enough so that you can shoot plenty of RAW files without feeling limited by your card's capacity, and computer processing power is so inexpensive that RAW file processing is no big deal. The advantages of JPEG—namely, you could shoot fast, file sizes were manageable, and the files didn't tax your computer and processing software—have been mitigated. So is there still a reason to discuss it? Absolutely!

Advocates of shooting JPEG fall into two camps. The first simply doesn't have any reason to shoot RAW. These photographers are happy to let the camera and its processing algorithms handle the image, and they like the results they get. They have no motivation to shoot RAW. The second camp doesn't buy into the advantages of RAW. These photographers feel like they get the exposure right when they push the shutter button. For these photographers, RAW is a crutch for sloppy camera work, and they don't need it because they aren't sloppy.

On the RAW side, advocates also fall into two camps. One wants the exposure, color and white-balance control that RAW files give. These photographers shudder at the thought of in-camera processors applying algorithms and compressing their precious image data. The second group is fundamentally concerned with the notion of having as much image data as possible. No one knows



JPEG ISO 200

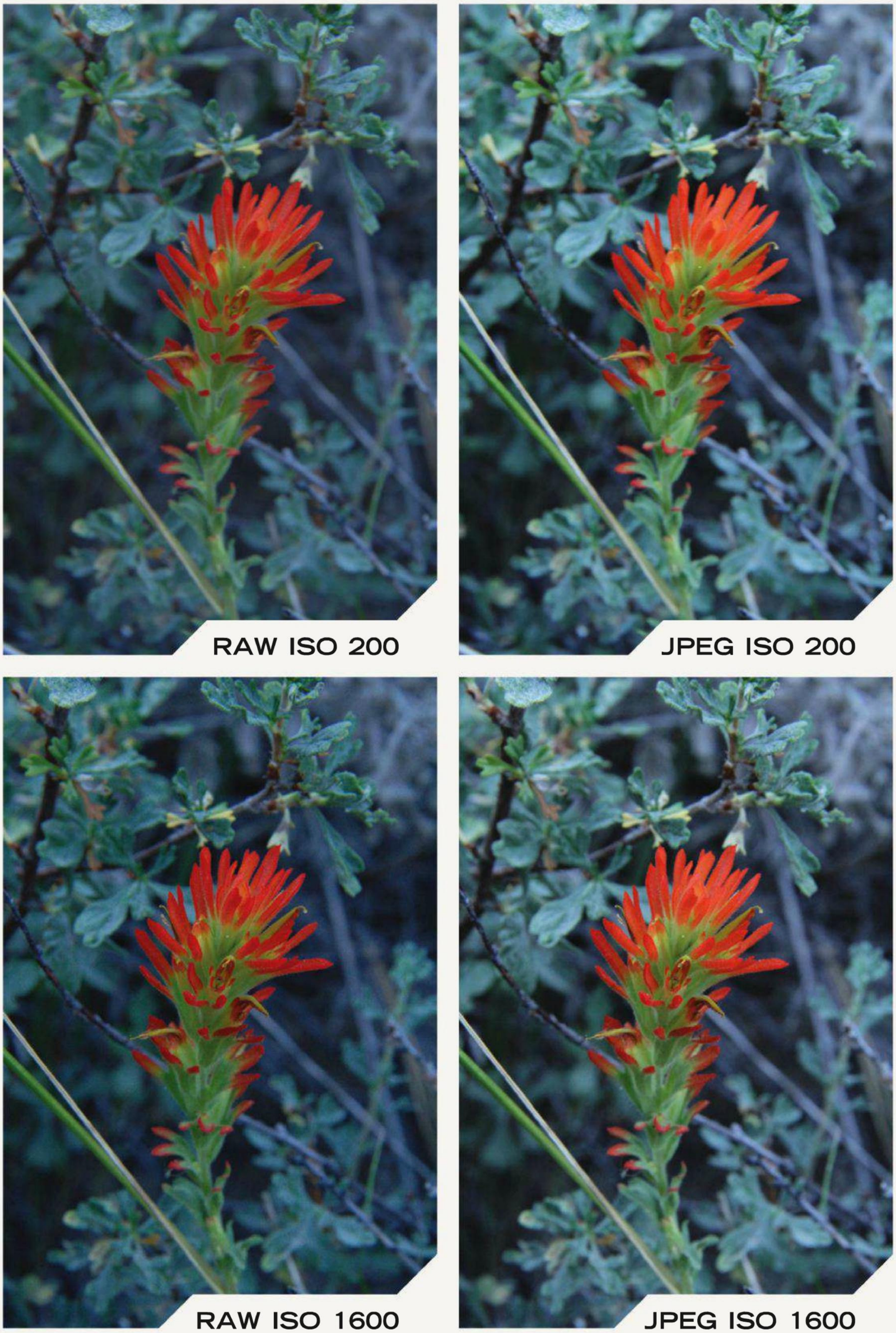
JPEG

Should you be using one, the other or both?

what the future will bring in terms of technology, and the RAW files offer the most potential to be ready for anything that can come, so images can have a longer life and they can be reworked to maximum benefit down the road.

Who's right? Well, all of these points of view have validity, and by now many readers will be asking a fundamental question: Since you can shoot RAW + JPEG without losing camera performance, why not just have the best of all worlds and forget the debate?

The differences between a RAW versus a JPEG file are immediately apparent when you open the images in the computer. Here, we've taken the same image in each format. At first blush, the JPEG is much more appealing. It has more contrast, richer color and more overall snap. Look at the insets, though. You can see that the RAW file preserves more fine detail in highlighted areas. Also, look carefully along the transition between the mountain ridge and the sky. The JPEG shows some slight artifacting compared to the RAW file. While it's clear that the RAW file preserves more detail, it's also a much duller image in its current state. You'll need to put in some time and effort in the computer to make the image look good.



RAW ISO 200

JPEG ISO 200

RAW ISO 1600

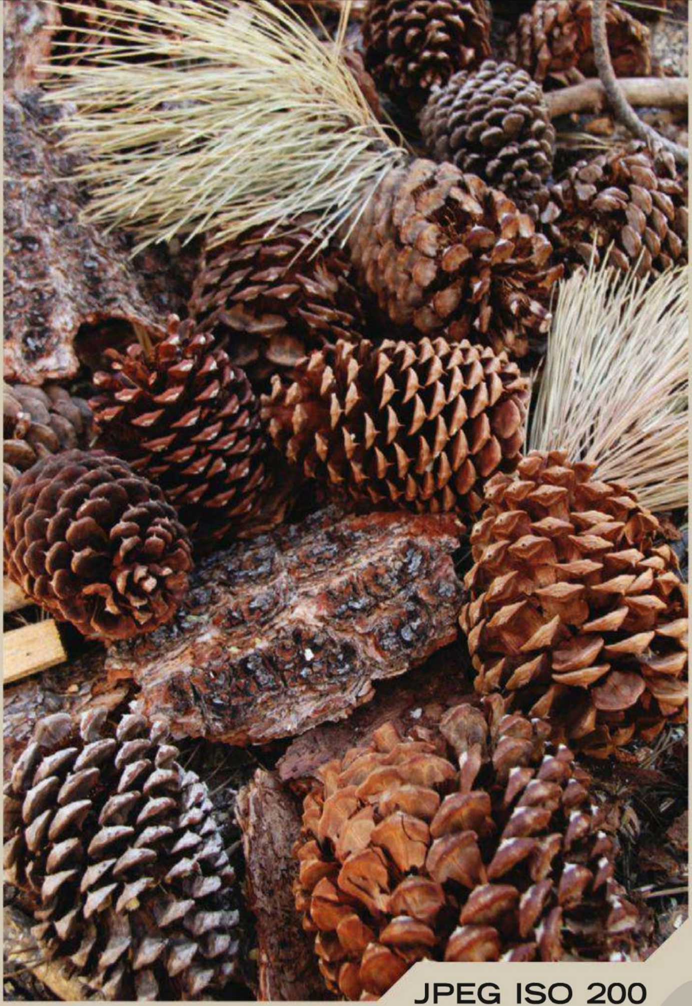
JPEG ISO 1600

LEFT: In these four images, you can see what happens to bright colors in RAW vs. JPEG files. The red and orange hues, in particular, are difficult for any image sensor, and applying JPEG algorithms exacerbates the problems. Also, you can see the effect of a higher ISO combined with JPEG processing on bright colors. The petals in the ISO 1600 JPEG have lost most of their subtle texture.

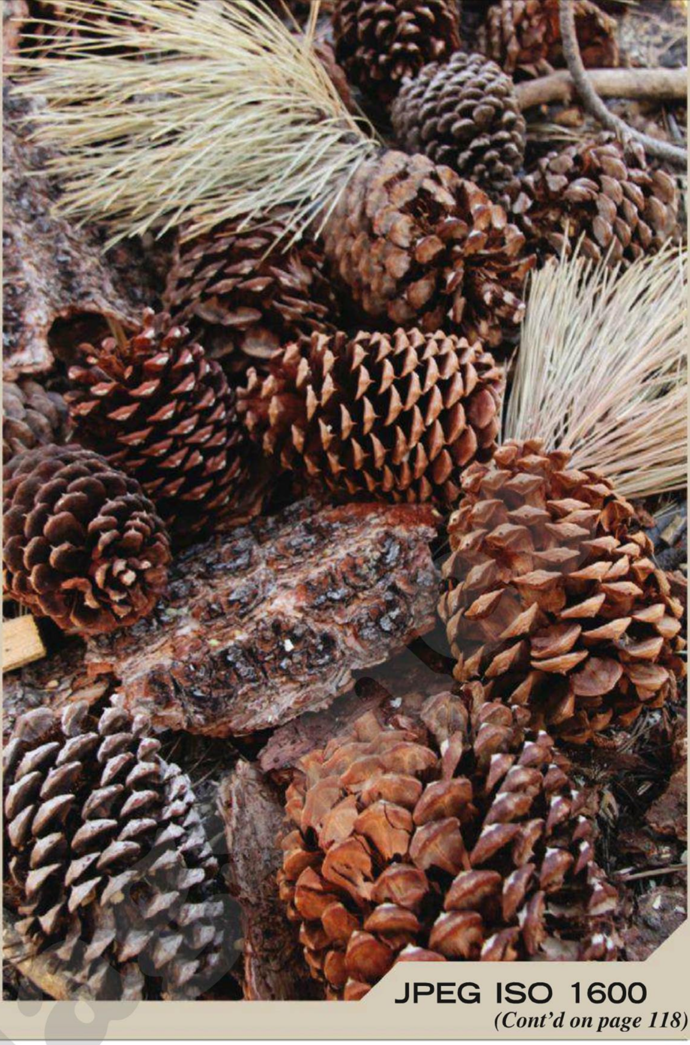
RIGHT: As you probably know, when you're shooting a lot of fine detail, higher ISOs can lead to a significant loss of that detail. When you add JPEG compression and processing into the mix, the problems are compounded. Notice the fine needles at the top and on the right side of this image. At ISO 1600, many of the individual needles are lost and the areas look more like clumps. RAW files shot at higher ISOs reduce the loss of detail.

Why Not Just Shoot RAW + JPEG All The Time?

Sure, RAW + JPEG keeps all of your options open, but it also takes up your memory card faster than shooting one or the other, and it can make things challenging down the road when you're organizing and working on images in the computer. Having multiple copies of the same file leads to all sorts of confusion if you're not careful and meticulous in your workflow and especially in your backup plans. For example, you might work on a JPEG, then save it as a TIFF so as not to overly compress the file. Later, you might work on the RAW file of the same image because you want to take advantage of the exposure latitude and you'll save that as a TIFF. If you don't keep track of all the files very well, you'll quickly become pretty lost between the multitudes of files. This isn't a problem unique to RAW + JPEG shooting, but it's easier to get confused when you're shooting RAW + JPEG.



JPEG ISO 200



JPEG ISO 1600

(Cont'd on page 118)

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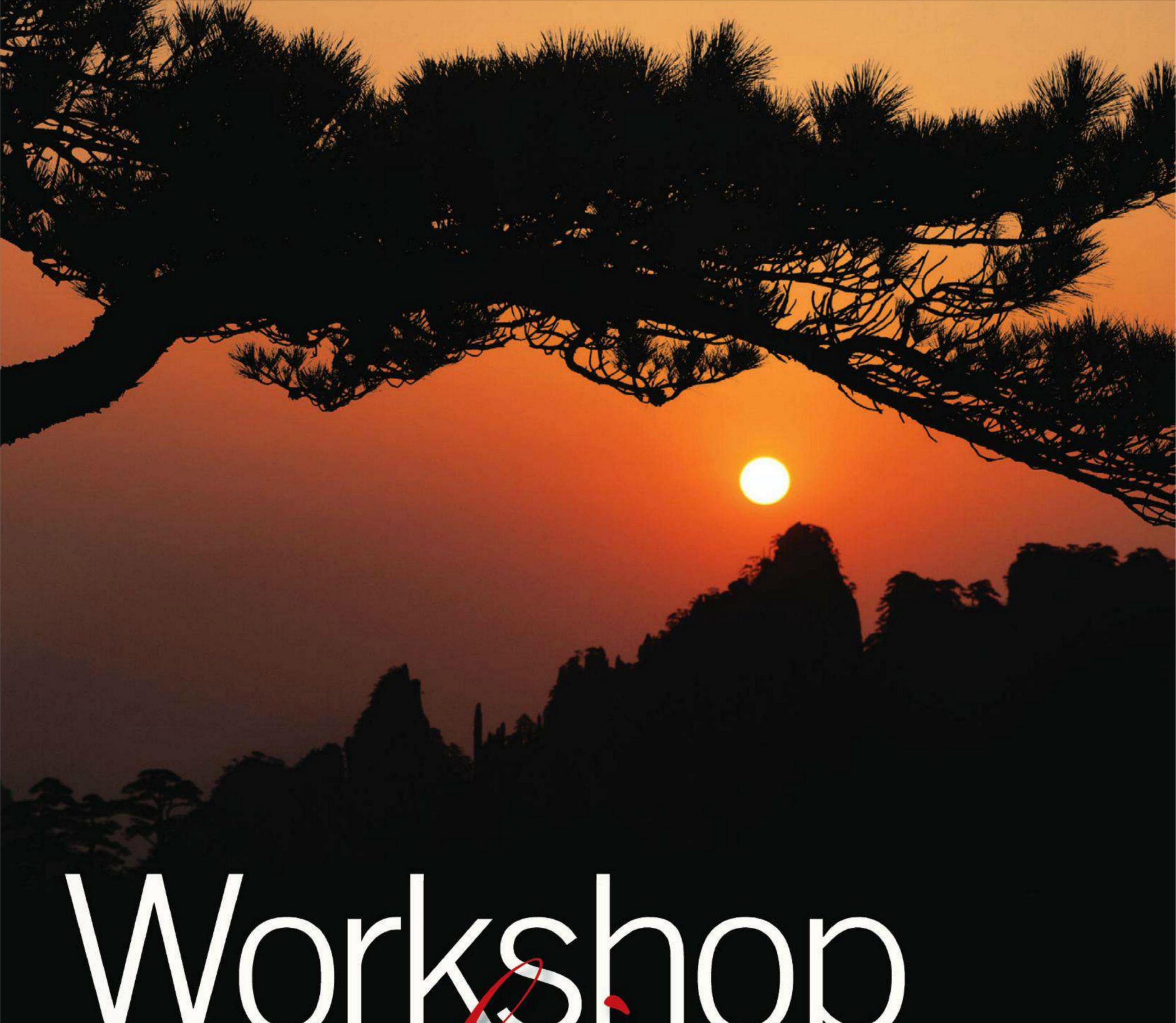


Workshop diary

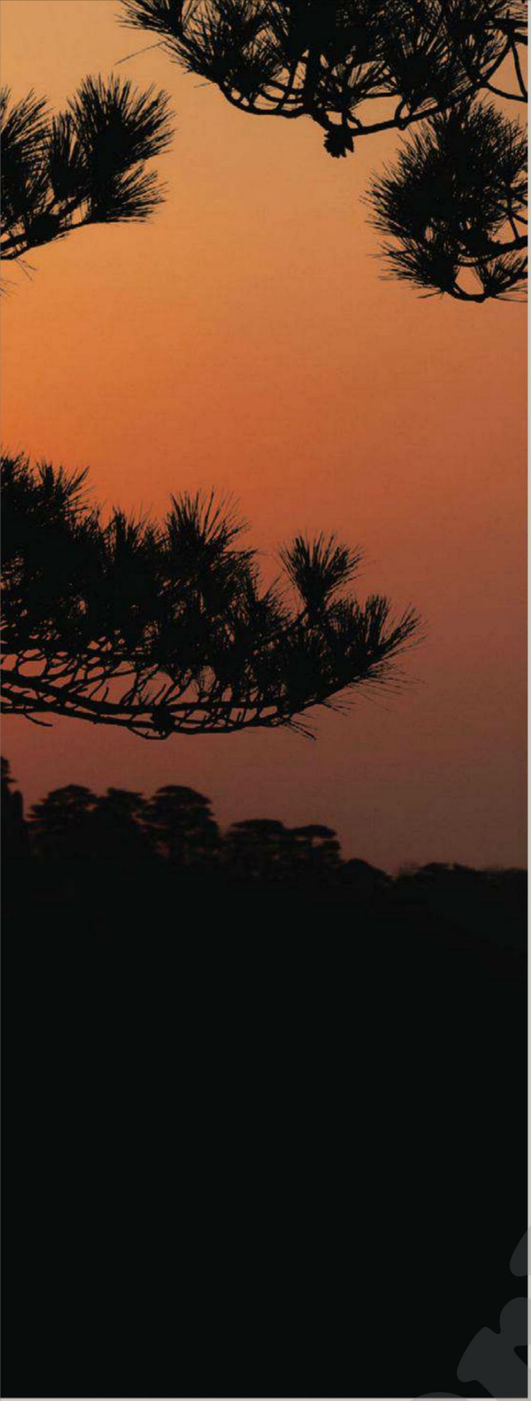
A global photographer gives us a feel for the agenda and flow of a high-end workshop when he treks to China with Art Wolfe

Text And Photography By Mark Edward Harris

The opportunity to study with a master photographer in the field, to see what he or she is seeing, and to travel with someone with a knowledge of the best locations and the ideal times to photograph them, are all great reasons for taking an "on-the-road" photography workshop. There's also the camaraderie—photographers live in an isolated bubble, and sharing the road with fellow lensmen and lenswomen can be a very enjoyable experience.

As part of the hundreds of interviews I've conducted with the who's who of photography, I've had the opportunity to discuss what key components make up a successful photography workshop. When it comes to outdoor photography, four of its most popular practitioners immediately come to mind: Frans Lanting, the late Galen Rowell, Jim Brandenburg and Art Wolfe.

The November 2009 issue of *Outdoor Photographer* featured my experience in Lanting's workshop in Santa Cruz, Calif. In 2011, I headed to China to join Art Wolfe, his assistant photography instructor Jay Goodrich and 14 students on a two-week workshop to experience



ABOVE: Sunset on Huangshan. Few places on Earth are more beautiful than China's Huangshan (Yellow Mountain). RIGHT: The rice terraces of Yuanyang near China's border with Vietnam have the perfect "terroir" to produce some of the best rice in the country.

firsthand Wolfe's approach to creating a high-end international workshop.

Day By Day

The group rendezvouses in Shanghai, where we meet Mr. Lu, our guide for the entire trip. Additionally, a local guide will join us at each location. Expert planning is essential for a successful workshop. From his years of experience, Wolfe has compiled a comprehensive list of locations and the best time of year to photograph them. With all of the logistics taken care of, our group could focus on creating strong images.

Anyone who has ever watched Wolfe's award-winning TV series, *Travels to The Edge*, knows the Seattle-based photographer likes to rise and shine on shoot days long before the sun does. We signed up to experience what it's like to be a professional outdoor photographer, and the occasional four and five o'clock wake-up calls come with the territory.

Like any other city, Shanghai comes to life with the rising sun. The beautiful morning light is something that Wolfe isn't going to let us miss. We head to a park where the denizens are practicing tai chi. Wolfe gives us a quick pep talk

ABOVE: A cormorant fisherman near Yangshuo. The fishermen are favorite subjects for photographers. A workshop guide can help you to be in the right place at the right time, as well as help you work with the people you're photographing.

on how to capture the scene without interfering and how to use shallow depth of field to eliminate distracting backgrounds. In the midst of the futuristic architecture and cityscapes of China's most modern city, it's great to have the opportunity to photograph an authentic tradition from the country's ancient past.

In the late afternoon, we board an overnight train to Tunxi, the jumping-off point for Huangshan (Yellow Mountain), the mountain range that has been reproduced in Chinese paintings since antiquity and a UNESCO World Heritage Site since 1990. We use the time on the train to get to know our workshop companions—a couple from Australia, a gentleman from Canada, the rest of us from the U.S. Most have been on previous Art Wolfe workshops to destinations including Vietnam, Japan, India and the Antarctic. While for the most part the participants aren't professionals, they're serious about the photographs they create and the Canons and Nikons they attach to their Really Right Stuff and Kirk ballheads atop carbon-fiber tripods. Anyone not up on the latest gear will be by the end of a travel workshop like this.

The next morning, on the bus to the aerial tram that will take us up Huangshan, Wolfe explains that he wants to keep the schedule on the mountain flexible to take advantage of changing weather conditions. Wolfe has been here to witness Buddha's Light (*foguang*), when the clouds create a sea around the mountain's rocky crags. Unlike most mountains where the great view is looking up, Huangshan is best appreciated looking down.

We spend the day seeking out interesting rock formations and rendezvous at a location Wolfe has selected in plenty of time to catch a dramatic sunset. He gives us a lecture on how to find natural frames such as tree branches to give depth to our two-dimensional medium.

When the sun dips behind the granite outcroppings, we head to the Xi Hai Hotel, an incredible engineering feat, given that all the building material had to be brought up by aerial tram with lots and lots of manpower. Throughout the trip, we're put up in three- and four-star hotels, even in remote locations where rooms are relatively sparse. Wolfe makes us work hard during the day, but makes sure we have the best possible rest each night.

The wake-up call comes when it's still dark for those who opt for a sunrise shot. Then it's back to the hotel for breakfast and a five-mile hike up and down thousands of steps to capture more of the dramatic landscapes Huangshan has to offer. Rather than having us backtrack, Wolfe has arranged for us to take an aerial tram down the other side of the mountain.

Dinner that night is scheduled at our hotel, the Ramada Huangshan Hotel, but word has gotten out that "the famous photographer Art Wolfe" is in town and our group is invited to a banquet hosted by local government officials. This is the kind of access that a workshop with a top photographer can provide. It doesn't hurt that *Travels to The Edge* is airing this particular night in China. The dinner includes numerous toasts with a local brew that was something between rubbing alcohol and moonshine. For most of us, the next morning's four-hour bus ride to Hangzhou Airport to catch a flight to Kunming, capital of Yunnan Province, is best spent sleeping.

Kunming is China's gateway to Southeast Asia, and after a relaxing evening and a good night's sleep we head to Yuanyang, a mountainous region near the Chinese border with Vietnam. The main residents here are from the Hani, Yi and Miao Chinese tribes, and their rice terraces in the surrounding hills are renowned for their beauty.

> **"We spend the night DOWNLOADING, EDITING, having our images CRITIQUED, then preparing for our next stop—one that has been at the top of many of my classmates' and my destination wish list for a long time—Guilin.**

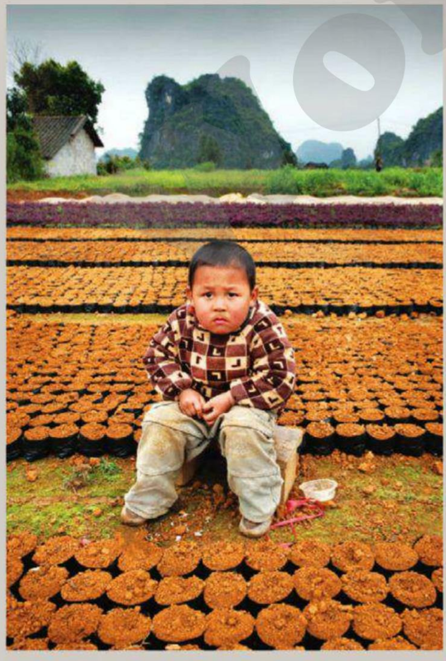
It's great to settle in at the Yunti Hotel in the town of Xinjie, our home for the next three nights. It's our first real opportunity to edit images, have a formal PowerPoint presentation by Wolfe and attend to the basic realities of adventure travel—the laundry. (Even here, we were given some valuable tips, with a pretrip packing list stressing the need for quick-dry fabric clothing.)

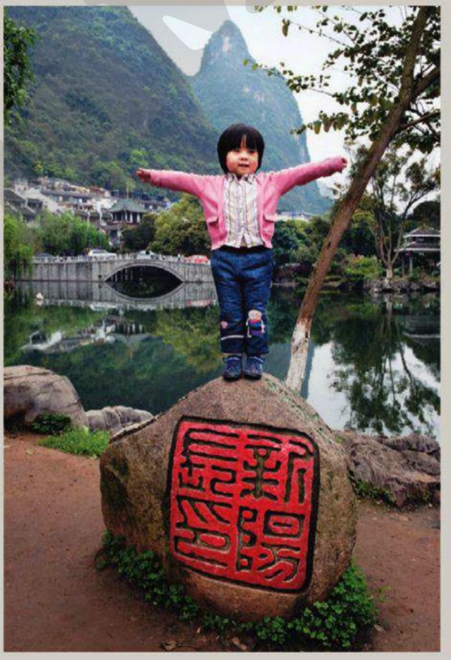
In the evening, Wolfe presents his work for us to better understand his modus operandi. He graduated from the University of Washington with bachelor degrees in fine arts and art education, both, years later, playing a major role in his ability to convey information successfully in a workshop format. He considers being invited on an Everest expedition, which brought him to China for the first time, his big photographic break.

Wolfe draws upon the great painters for inspiration. Impressionists such as Monet translate photographically as long exposures to create impressionist photographs. Van Gogh inspires Wolfe to incorporate movement in certain photographs. Picasso's Cubism, Dali Surrealism, Jackson Pollock's controlled wildness and Mark Tobey's Asian aesthetic also find their way into an Art Wolfe photograph. M.C. Escher's use of positive and negative space, a balance between light and dark, helps Wolfe explain to us how to make the best use of the entire photographic frame. He also points out that these artists created bodies of work rather than just a bunch of unrelated pieces, and suggests that we think in the same way.

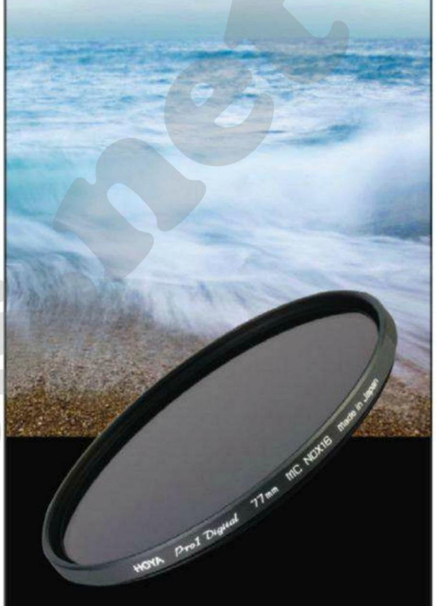
Wolfe concludes his presentation by projecting and discussing an abstract

(Cont'd on page 108)





LEFT: A child in a field between Guilin and Yangshuo.
ABOVE: A young girl poses for a photo in Yangshuo.



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Filter Series

ND16

Turn a cloudy day into something beautiful

The ND16 is a dark neutral density filter with a filter factor of 16, meaning there is 4 stop light loss. This is a great filter for slowing down shutter speeds to turn movement into artistic blur, turn motion into beautiful creativity.

Another use of the ND16 would be controlling depth of field. With the strong ND16, a much wider aperture can be used. Wide apertures like F/1.4 and F/1.8 create a very shallow depth of field exquisitely isolating the subject from the background. The creative possibilities are endless with this type of filter.

The HOYA PRO1 Digital ND16 has all the features of the HOYA PRO1 Digital Series such as high quality optical glass, specialized DMC multi-coating to reduce reflections and a low profile filter frame for use on super-wide and telephoto lenses alike.

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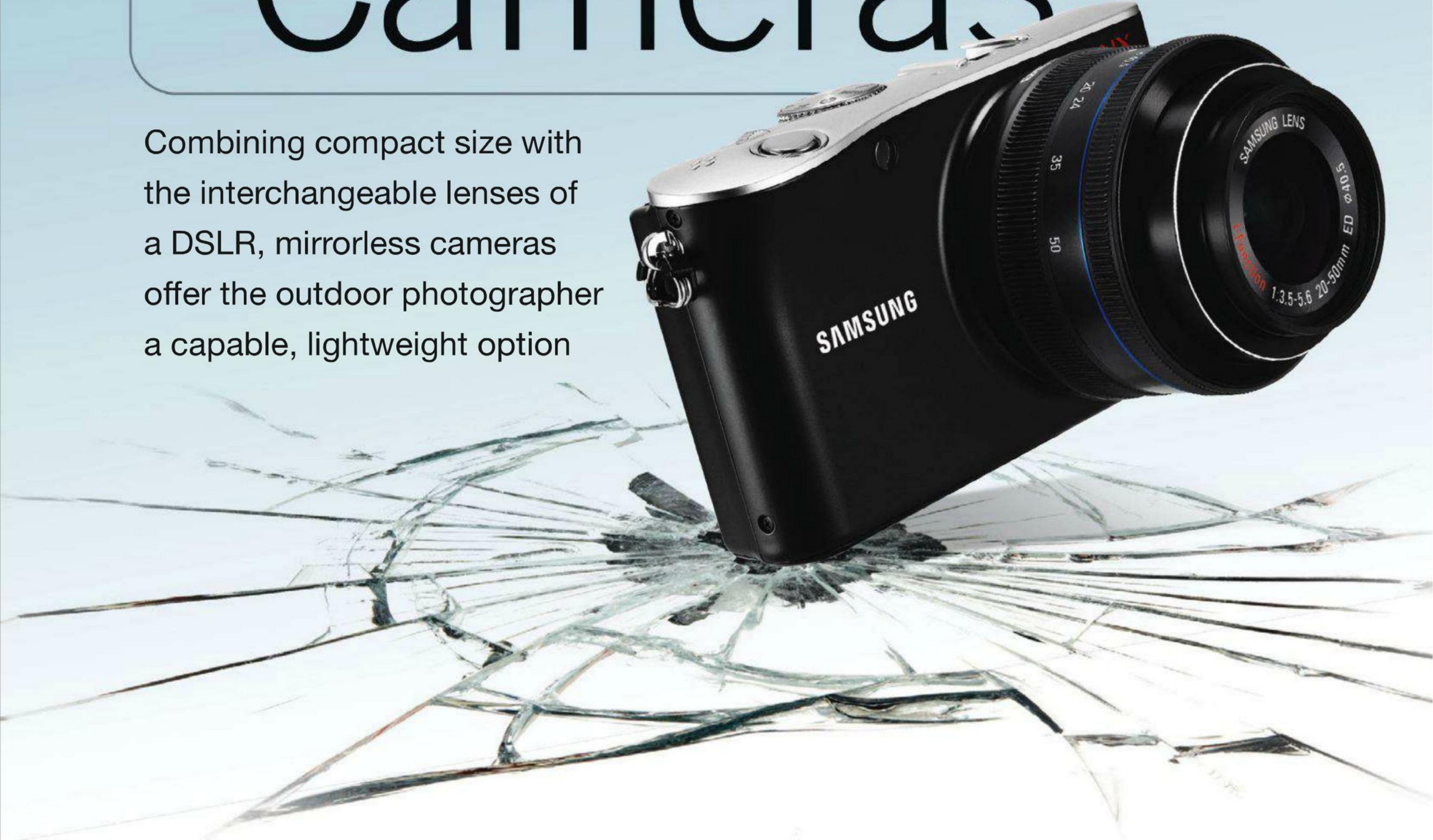
Our Guide To MIRRORLESS Cameras

Combining compact size with the interchangeable lenses of a DSLR, mirrorless cameras offer the outdoor photographer a capable, lightweight option



Outdoor photography—landscape, wildlife, close-up, travel and sports—covers a lot of territory and demands cameras that deliver excellent image quality and a wide range of focal lengths.

The two most popular types of digital cameras are DSLRs and compact point-and-shoots. For *OP* readers—nature photographers—DSLRs are far and away the most popular for several reasons. DSLRs produce excellent image quality and are very quick, and interchangeable lenses make them highly versatile. Overall, DSLRs give you performance that a point-and-shoot can't come close to achieving. The main disadvantages of DSLRs are that they're relatively bulky, complex and costly. Although overall point-and-shoot cameras don't have the performance of a DSLR, they have definite advantages. They're very convenient and simple to use, and most will fit in a pocket. The main drawbacks are that they contain tiny image sensors whose image quality can't match that of the DSLRs, they're quite slow compared to DSLRs in both shooting speed and AF performance, and they limit you to the focal range provided by the camera's built-in lens.

In 2008, a new camera type appeared: the mirrorless, interchangeable-lens camera. Sometimes referred to as EVIL (Electronic Viewfinder Interchangeable Lens, although not all have electronic viewfinders), the mirrorless models have become popular with some photographers over the last couple of years. The promise of this new category is the combination of DSLR image quality and interchangeable-lens versatility with compact camera portability.

For nature photographers, the early mirrorless models weren't perfect. Three years later, and the technologies involved have advanced to the point where the viewfinders are better, sensors and processors have improved, and AF systems are faster and more accurate. In light of these advancements, we decided this is a good time to take an in-depth look to see if your next primary camera will be mirrorless.

How Do They Make Them So Small?

An SLR camera contains an SLR mirror positioned at a 45º angle to the incoming light from the lens. In this position, it reflects the light up to a focusing screen, then onto a pentaprism or pentamirror and finally to an eye-level viewfinder, which presents the image right-side-up and laterally correct to the eye for composing and focusing. When you press the shutter button to take a shot, the mirror flips up and out of the light path so the light can reach the film or image sensor. The viewfinder image blacks out briefly as the exposure is made because the mirror can't send the image to the viewfinder when it's in the "up" exposing position. Once the exposure has been made, the mirror automatically drops back down into the viewing position, and you can see through the viewfinder again.

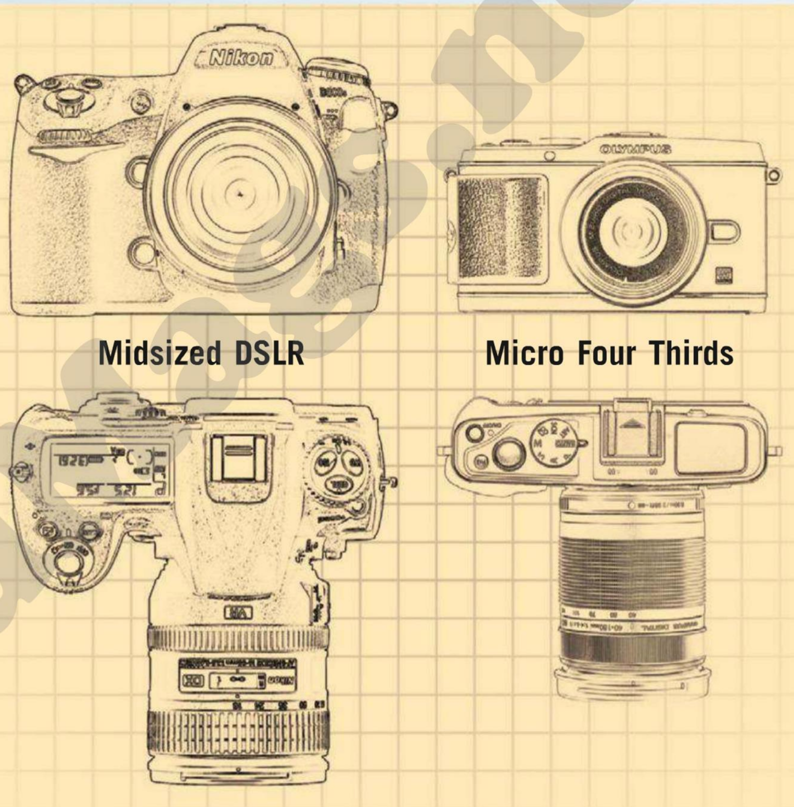
Mirrorless, interchangeable-lens cameras are smaller, lighter and less complicated because they eliminate the reflex components of a single-lens-reflex camera: the mirror, mirror box, focusing screen and prism viewfinder. With these parts gone, camera designers can move the lens mount closer to the image plane, which means they can design smaller, simpler lenses. You use the camera's Live View LCD monitor for composing and focusing, just as with a compact digital camera. For those who prefer eye-level operation, some mirrorless cameras have built-in, eye-level electronic viewfinders (EVFs), or accessory attachable EVFs. The mirrorless design also does away with mirror blackout and the vibrations caused by the mirror's movement.

There's still the issue of getting a big DSLR sensor into a compact body, but the camera designers figured it out, and most mirrorless bodies are closer to point-and-shoot size than DSLR size. However, a big sensor requires a big lens diameter, so the lenses for the APS-C-sensor cameras are fairly large relative to the camera body. But the mirrorless body and lens combinations are still smaller than equivalent DSLR combos.

Image Quality

For nature photography, nothing is as important as image quality. Landscape and macro photographers want to make big prints with great detail. Wildlife shooters want to see texture in fur and feathers. Both examples require cameras capable of producing excellent image quality. The main point of the mirrorless, interchangeable-lens cameras is to provide DSLR image quality in a compact body. Most do this by putting a DSLR sensor in that compact body.

It's not so much about pixel count. Point-and-shoot digital cameras now offer 12, 14 and even 16 megapixels. But much potential detail is lost to image noise because the sensors in point-and-shoot digital cameras are very small, and the pixels are much smaller and packed closer together than those on a large DSLR sensor with the same pixel count. The combination of small sensor area and tiny pixels means point-and-shoot cameras aren't very efficient at collecting light. This results in high-noise, point-and-shoot images, especially at ISOs above 200.



Volumetric Efficiency Of A Mirrorless Outfit

Consider, for example, a high-end, entry-level DSLR body and an 18-200mm compact zoom lens (equivalent to a 28-300mm zoom on a 35mm camera). The body measures around 5.2x4.1x3.0 inches and weighs 24.3 ounces, depending on the model. The 18-200mm zoom measures 3.0x3.8 inches and weighs 19.8 ounces. Compare that to a comparable Micro Four Thirds body and equivalent zoom (14-150mm). The body (SLR-style with built-in EVF) measures 4.5x3.3x1.8 inches and weighs 11.8 ounces; the lens measures 2.5x3.3 inches and weighs 9.9 ounces. Switch to a "flat," compact-style, mirrorless body, and the camera size drops to 4.3x2.5x1.3 inches and 7.7 ounces. The mirrorless system weighs just half as much as the equivalent APS-C DSLR system. The Olympus M.Zuiko Digital 75-300mm *ƒ*/4.8-6.7 supertele-zoom for M4/3 cameras (equivalent to a 150-600mm zoom on a 35mm camera) measures just 2.7x4.6 inches and weighs just 15.2 ounces! The size and weight savings are less dramatic with APS-C-sensor, mirrorless cameras because they require larger lenses to cover the larger sensors, but even so, the lenses—and entire systems—are noticeably more compact than DSLR systems.

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MIRRORLESS CAMERAS

	Sensor	Format	Normal ISO Range*	Max. fps°	AF	Top Video	Shots per Charge**	View-finder	LCD	Dimensions	Weight	Street Price (body)
Olympus PEN E-P3	12.3 MP	M4/3	200-12,800	3	Contrast	1080/60i	330	EVF opt.	3.0/614K OLED	4.8x2.7x1.4 in.	11.3 oz.	$899^
Olympus PEN E-PL3	12.3 MP	M4/3	200-12,800	5	Contrast	1080/60i	300	EVF opt.	3.0/460K Tilt	4.3x2.5x1.5 in.	9.3 oz.	$699^
Olympus PEN E-PM1	12.3 MP	M4/3	200-12,800	5	Contrast	1080/60i	TBA	EVF opt.	3.0/460K	4.3x2.5x1.3 in.	7.7 oz.	TBA
Panasonic Lumix DMC-GH2	16.0 MP	M4/3	160-12,800	3°°	Contrast	1080/60i	330	EVF	3.0/460K Tilt	4.9x3.5x3.0 in.	13.8 oz.	$999^
Panasonic Lumix DMC-G3	16.0 MP	M4/3	160-6400	3°°	Contrast	1080/60i	270	EVF	3.0/460K Tilt	4.5x3.3x1.8 in.	11.8 oz.	$599
Panasonic Lumix DMC-GF3	12.1 MP	M4/3	160-6400	2°°	Contrast	1080/60i	320	None	3.0/460K	4.2x2.6x1.3 in.	7.8 oz.	$499
Pentax Q	12.4 MP	1/2.3-in.	125-6400	5	Contrast	1080/30p	250	EVF opt.	3.0/460K	3.9x2.3x1.3 in.	6.3 oz.	$799
Samsung NX10	14.6 MP	APS-C	100-3200	3	Contrast	720/30p		EVF	3.0/614K AMOLED	4.8x3.4x1.6 in.	12.3 oz.	$699^^
Samsung NX100	14.6 MP	APS-C	100-3200		Contrast	720/30p	420	EVF opt.	3.0/614K AMOLED	4.7x2.8x1.4 in.	9.9 oz.	$549^^^
Samsung NX200												
Sony NEX-7	24.2 MP	APS-C	100-16,000	3°°	Contrast	1080/60p	400	EVF	3.0/921K Tilt	4.7x2.6x1.7 in.	10.3 oz.	$1,200
Sony NEX-5N	16.1 MP	APS-C	100-25,600	3°°	Contrast	1080/60p	430	EVF opt.	3.0/921K Tilt	4.4x2.3x1.5 in.	7.4 oz.	$600
Sony NEX-C3	16.2 MP	APS-C	200-12,800	2.5°°	Contrast	720/30p	400	Optical opt.	3.0/921K Tilt	4.3x2.4x1.3 in.	7.9 oz.	$649^^

*Standard ISO range; most cameras also provide expanded ISO settings above and sometimes below those listed here
**Approximate number of shots per full battery charge, per manufacturer
°Maximum frame rate at full resolution, with autofocusing for each shot
°°Faster frame rates available with focus fixed
^With 14-42mm kit lens
^^With 18-55mm kit lens
^^^With 20-50mm kit lens

Olympus PEN E-P3

Olympus PEN E-PL3

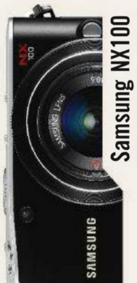
Olympus PEN E-PM1

Panasonic Lumix DMC-GH2

Panasonic Lumix DMC-G3

Panasonic Lumix DMC-GF3

Samsung NX200

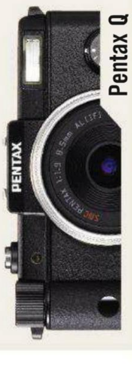

Samsung NX100

Samsung NX10

Sony NEX-C3

Sony NEX-5N

Sony NEX-7


Pentax Q

The noise becomes more evident the bigger you print the images. The large DSLR sensors can capture more light for lower-noise images. And for a given pixel count, the DSLR pixels will be much larger, which also enhances light collection and reduces image noise. Bigger image sensors with bigger pixels result in better image quality, and the ability to use high ISO settings while maintaining image quality. Good image quality at higher ISO settings also opens up a lot of low-light photography to the larger-sensor-camera user.

Olympus and Panasonic mirrorless models use Micro Four Thirds sensors. This means they're based around the same standard 17.3x13.0mm Four Thirds System sensor used in standard Four Thirds System DSLRs, but the cameras are much smaller due to the absence of the reflex system. Micro Four Thirds sensors are smaller than the 23.6x15.6mm APS-C sensor, but still far larger than the 8.8x6.6mm and smaller sensors used in point-and-shoot digital cameras.

Samsung and Sony use APS-C sensors in their mirrorless cameras. As we go to press, Sony just introduced the mirrorless NEX-7, with the same 24.3-megapixel APS-C sensor used in its new flagship A77 translucent-mirror DSLR.

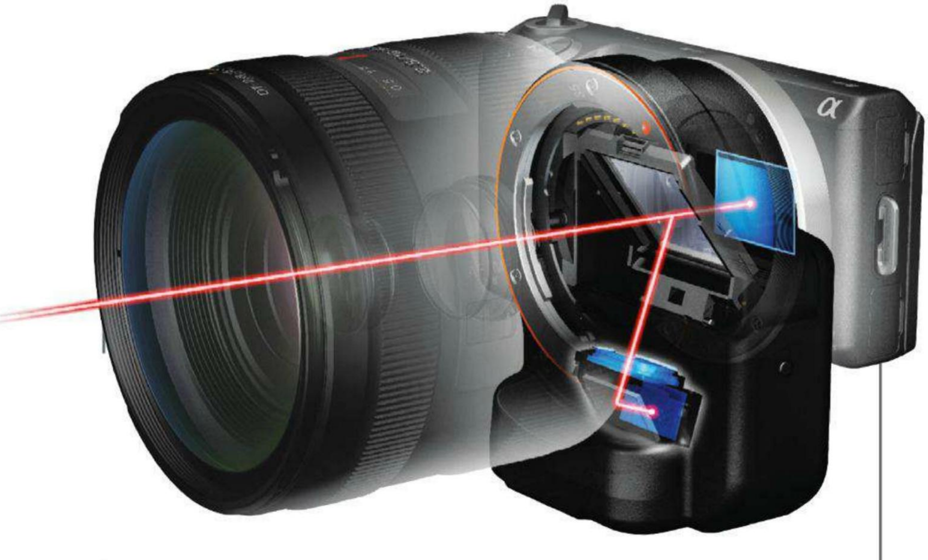
Pentax's Q is the smallest of the mirrorless, interchangeable-lens cameras, in part because it has the smallest sensor: a 1/2.3-inch (6.16x4.62mm) unit typical of the size used in compact digital cameras. We haven't had a chance to test this camera yet.

Tie: Because there's so much variability of image quality between DSLR models, we can't give either the DSLR or the mirrorless, interchangeable-lens camera a clear advantage here.

Interchangeable Lenses

Perhaps even more than image quality, interchangeable lenses are the DSLR's strong point. Whatever your outdoor need—a supertelephoto for distant wildlife, a super-wide-angle to take in a grand vista or a macro lens for life-sized shots of insects and flowers—DSLRs have it. Mirrorless cameras bring interchangeable lenses to the compact camera world.

DSLRs offer a wider range of lenses than the mirrorless cameras do—fisheyes to supertelephotos, true macro lenses, even tilt-shift lenses. Being relatively new products, there isn't such a wide range of lenses built just for mirrorless



The new Sony LA-EA2 Alpha NEX Camera Mount Adapter lets you attach Alpha A-mount lenses to a Sony E-mount camera body with continuous phase-detection AF in both still and video modes.

cameras, but through the use of adapters, you get a lot of options.

The Micro Four Thirds models from Olympus and Panasonic can use Micro Four Thirds lenses, and via adapter, regular Four Thirds System lenses, which expands the choices for those cameras considerably, although in some cases, you lose AF capability. Sony has introduced the LA-EA2 adapter for its NEX mirrorless cameras, which not only lets you mount Sony A-mount DSLR lenses and legacy Minolta Maxxum lenses on the NEX cameras, but also provides phase-detection AF with them—the adapter contains a phase-detection AF system based on the translucent-mirror technology introduced in Sony's SLT cameras—it's one of the most useful accessories we've seen in 2011.

Actually, because of their short flange-back distances—the distance between the lens mount and the image plane—mirrorless cameras can use any lens for which an adapter can be found, and indeed many users take advantage of this to mount Zeiss and Leica lenses, as well as lenses from their old SLR systems on their cameras. If you're a Canon or Nikon DSLR user, you likely can find an adapter that will let you use those lenses on your mirrorless cameras. Again, the adapters generally mean you must focus and adjust exposure manually, but you can use a wide range of lenses. **Advantage: DSLRs. Although you can get more lens options for a mirrorless, interchangeable-lens camera through the use of adapters, DSLRs still have a clear advantage here.**

Portability

While few of them are really pocketable with lens attached, the mirrorless cameras are much smaller and lighter than even entry-level DSLRs. This means a mirrorless system will take up less space, which is ideal when traveling by air or even car. Smaller and lighter is especially nice when you're hiking with gear. And it's not just the camera. A mirrorless camera and lens combination is much smaller and lighter, so you're carrying a lighter system in much less space—and the more elements to your system, the greater the total savings in bulk and weight.

Advantage: Mirrorless, interchangeable-lens cameras. There are some small DSLRs, but portability belongs to the mirrorless category as a whole.

AF Performance

Wildlife photographers need an AF system that can track moving subjects accurately, and landscape and close-up shooters need an AF system that can focus precisely where desired. Many landscape and macro photographers focus manually, so their cameras must provide accurate manual focusing, as well. All of the mirrorless cameras utilize contrast-based AF rather than the phase-detection AF used in DSLRs. The contrast-based AF systems use the image sensor itself to measure contrast, focus being most accurate when contrast is at a maximum. The contrast-based systems in early mirrorless cameras were very slow, but that has changed. Today, the

(Cont'd on page 106)

Tamron

SP 70-300mm
Di VC USD

Tamron's premium **telephoto zoom** delivers best-in-class resolution, fast autofocus and Vibration Compensation

Tamron's SP 70-300mm Di VC USD excels with resolution and contrast superior to comparable lenses—even those that cost considerably more.

Designed for use with both full-frame and APS-sensor cameras, the SP 70-300mm Di VC USD is available for Canon, Nikon and Sony* cameras. When used with an APS-sensor camera, the optical range is equivalent to approximately 109-465mm. Tamron's Vibration Compensation technology automatically corrects for camera shake and allows you to use slower shutter speeds in lower-light conditions.

The lens also features Tamron's Ultrasonic Silent Drive (USD) AF system, as well as LD and XLD elements to deliver perfect sharpness, excellent contrast and rich colors.

*Sony mount is w/o VC

Di SP USD VC

To learn more, visit Tamron's website at tamron-usa.com.

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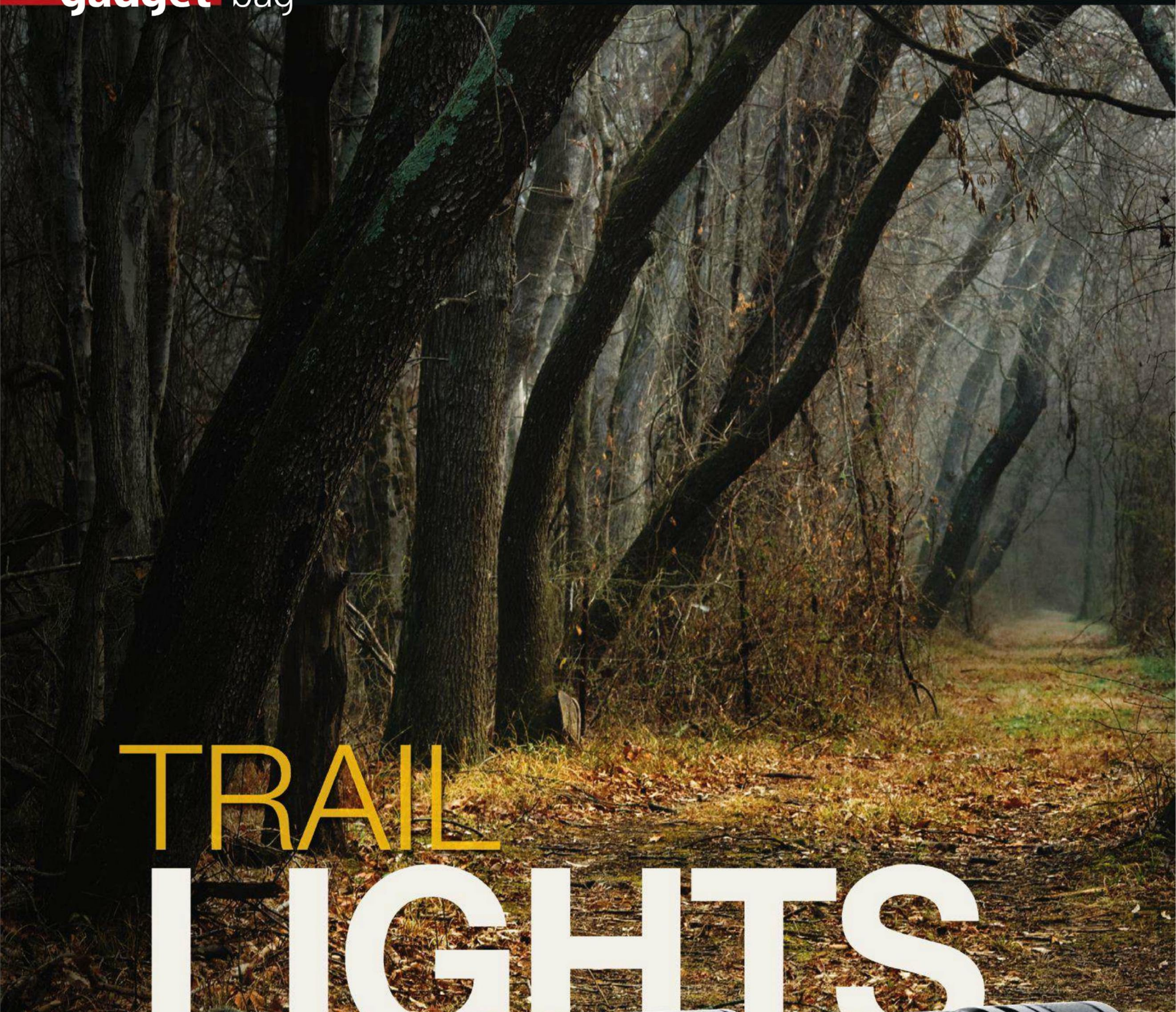


TRAIL LIGHTS

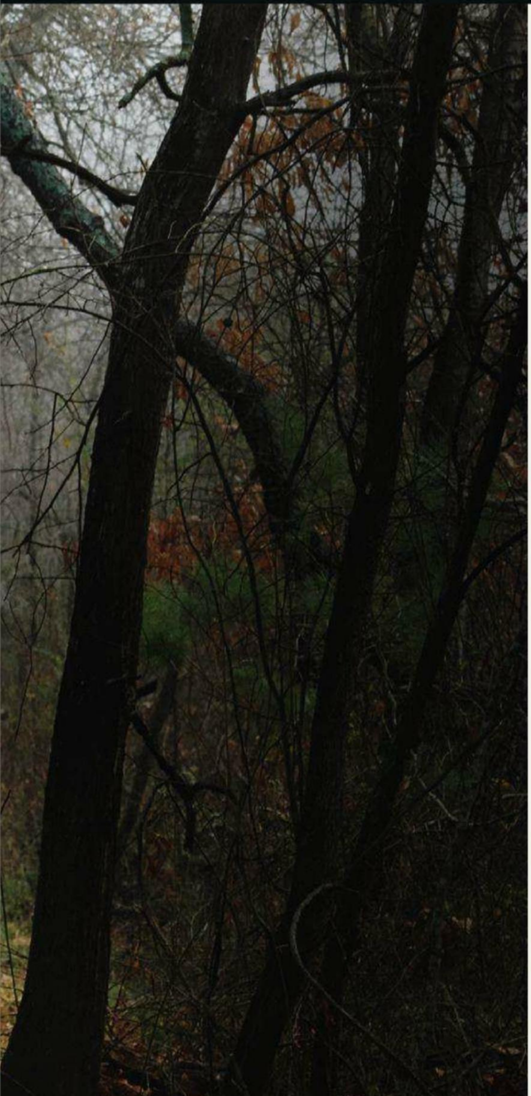
Small flashlights have 1001 uses for an outdoor photographer in autumn

Fenix E21

If you want to get the very best photos, you need to capture the very best light. That special light tends to happen at the fringes of the day as the sun is popping above the horizon and just before it slips below. That's easy enough to do, but it leaves you with one slight problem. You have to be prepared to hike and set up or take down your gear in the dark. A flashlight is a no-brainer, right? But all flashlights aren't created equal, and we can offer some that are better choices for nature photographers than others.

The advent of LED lights has changed the game for flashlight makers. You can pack a lot of power into a small package that doesn't need a huge battery and that doesn't get super-hot. LEDs almost never burn out, so you're unlikely to have the problem of a flashlight that doesn't work when you most need it.

We're advocates of AA- or AAA-powered lights. Unlike models that require exotic cells like CR123, AA and AAA are readily available and inexpensive, and in an emergency they're exchangeable with other battery-powered devices—that is, you can rob from one device to power



another in a pinch. No matter where you go in the world, you can probably find AA or AAA batteries without too much difficulty.

Obviously, rugged construction is important since this is a tool you'll use in the field. Not too long ago, we wouldn't have advocated a metal flashlight, but today, lightweight alloy models are available that withstand the elements and don't succumb to rust or sand and dust. Water-resistance is still critical, of course, but plastic or metal are acceptable.

The switch is one aspect of the light that a lot of people don't think about, but it's important because the wrong switch easily can turn on when you're not aware and drain the battery. Push-button switches need special care to prevent them from being accidentally turned on. Sliding switches are also prone to this when sitting in a bag where other gear can rub alongside. Helical switches are particularly reliable when properly handled. Lights with helical switches turn on and off by screwing the contacts together. To turn them off, you just unscrew them slightly. They're extremely rugged and reliable, and they're very difficult to turn on by accident so you stand less chance of finding your batteries dead when you need them most. The only thing you need to pay special attention to is to have the top

▲ **Fenix HL21**

Princeton Tec

▲ **Princeton Tec Remix**

Kenko

Zéta EX

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The World's Thinest, Lightest, Brightest Circular Polarizer Ever!

EXTRA THIN, EXTRA LIGHT

Only 0.8mm Thin Glass, 10g Feather Light Filter

Zeta EX uses a specially polished 4 layer thin glass and ultra thin frame combination making it wide-angle lens compatible. Even with being this thin, the Zeta EX still has the front screw on function for attaching a lens cap.

EXTRA BRIGHT

High Transparency Polarizing Film

Zeta EX transmits as much as 25% more light through the polarizing film, giving the photographer about 1 stop more light than a standard circular polarizer.

EXTRA ANTI-REFLECTIVE

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The glass of this lens is precision machined and attached This innovative coating will not interfere with any color or light transmission. Reflections are eliminated by allowing light to enter the filter at virtually any angle.

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Mini MityLite

▲ Pelican 1910

▲ Petzl ZIPKA PLUS²

Princeton Tec IMPACT XL

▲ Princeton Tec Impact XL

of the light unscrewed enough so it won't turn on because of a change in barometric pressure. Think about driving down a mountain. The change in air pressure is enough to push the contact together if the light is only barely unscrewed. It's easy to prevent this just by giving the light an extra quarter of a turn.

Headlamps are an outstanding option for photographers. They free up your hands so you can work with your camera, and they light up the area where you turn to look. Overall, they're just incredibly convenient. If anyone makes a wisecrack that you look like a coal miner, you can just ignore it.

Here are some favorite lights for outdoor photographers.

Fenix HL21

The HL21 is a lightweight, high-intensity, water-resistant headlamp powered by a single NiMH or alkaline AA battery. Its 90-lumen Cree XP-E LED (R2) features digitally regulated output to maintain a constant brightness, and it has a life span of 50,000 hours. The unit is made of high-quality plastic and premium Type II hard-anodized aluminum, and features a push-button switch. Dimensions are 2.6x1.3x1.9 inches, and it weighs 1.45 ounces (without battery). Estimated Street Price: $34.95.

Fenix E21

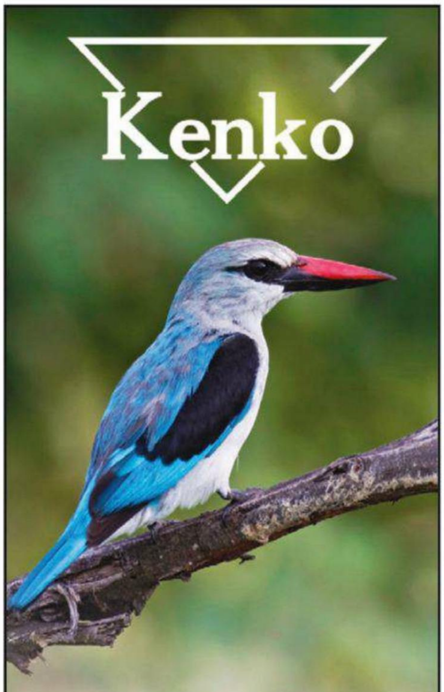
A practical outdoor flashlight, the Fenix E21 is powered by two AA batteries. Its 50,000-hour Cree XP-E LED provides two power settings. Just twist the unit to switch between 48 lumens (battery duration 11 hours) and 150 lumens (battery duration 2 hours, 15 minutes). A tactical push button in the tail-cap turns the flashlight on and off. Constructed of aircraft-grade aluminum with knurled texture for a good grip, the E21 is waterproof to 2 meters. The flashlight is 6.5 inches long, 1 inch in diameter, and weighs 3.2 ounces. Estimated Street Price: $34.95.

Pelican 1910

Designed for easy one-handed operation, Pelican's 1910 LED is a new ultracompact flashlight that features a 39-lumen LED and is powered by a single (included) AAA alkaline battery, which is good for about an hour of operation. Operation is simple. Press the tail-cap button to switch on, press again to switch off; press gently for momentary-on. Constructed of aircraft-grade aluminum alloy, the 1910 is water-resistant. A handy belt clip is built into the unit. The flashlight is 3.6 inches long and weighs just one ounce without battery (1.4 ounces with). Estimated Street Price: $29.95.

Princeton Tec Remix

The Remix headlamp features polycarbonate construction, an asymmetrical single-arm bracket, an easily accessible battery door and a large



Kenko

ULTRA LIGHTWEIGHT
BIRDING
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Weight only
16.04 oz.!

ultraVIEW
EX

OP 8x32DH II /OP 10x32DH II

ECO GLASS MULTI COAT WATER PROOF ULTRA LIGHT
OP8x32DHII:16.04oz.
OP10x32DHII:16.57oz.

Ultra lightweight, Superior optical performance, durability and shock resistance defines these premium roof prism birding binoculars. The ultimate choice for birding enthusiasts.

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www.thkphoto.com

push-button switch. Three Ultrabright LEDs and one Maxbright LED let you choose between long-range spotting or close-range area light. Power is 100 lumens, and burn time (on three AAA batteries) is 200 hours (Ultrabright LEDs) or 28 hours (Maxbright LED). The unit measures 2.3x1 inches and weighs 2.9 ounces. Estimated Street Price: $30.95.

Princeton Tec Impact XL

A "traditional" design flashlight, the rugged, durable Impact XL features a Maxbright LED rated at 65 lumens and a rubber overmold for a good grip and shock- and impact-resistance. It's also waterproof. The Impact XL is powered by four AA batteries, with a rated burn time of 50 hours. Operation is simple; just twist the bezel to turn it on and off. Estimated Street Price: $29.95.

Petzl ZIPKA PLUS^2

An ultracompact headlamp, the ZIPKA PLUS^2 features one high-output white LED, one red LED and five lighting modes (three continuous, two blinking). A ZIP retractable cord system lets you wear the unit on your head or wrist. The high-output LED produces up to 50 lumens, and the unit can burn for up to 140 hours at economy setting. An electronic push-button switch provides simple operation. The ZIPKA PLUS^2 operates on three AAA batteries (it comes with three alkalines; lithiums can be used for better performance in cold weather), and is IPX4 water-resistant. It weighs just 2.5 ounces with batteries. Estimated Street Price: $40.95. OP

resources

Fenix
www.fenixlight.com

Pelican Products
www.pelican.com

Petzl
petzl.com

Princeton Tec
princetontec.com

MORE On The Web

The Gadget Bag column is available as an archive in the Gear section of OP's website at **www.outdoorphotographer.com**. You'll find information and reviews on new and exciting cameras, lenses, printers and much more!

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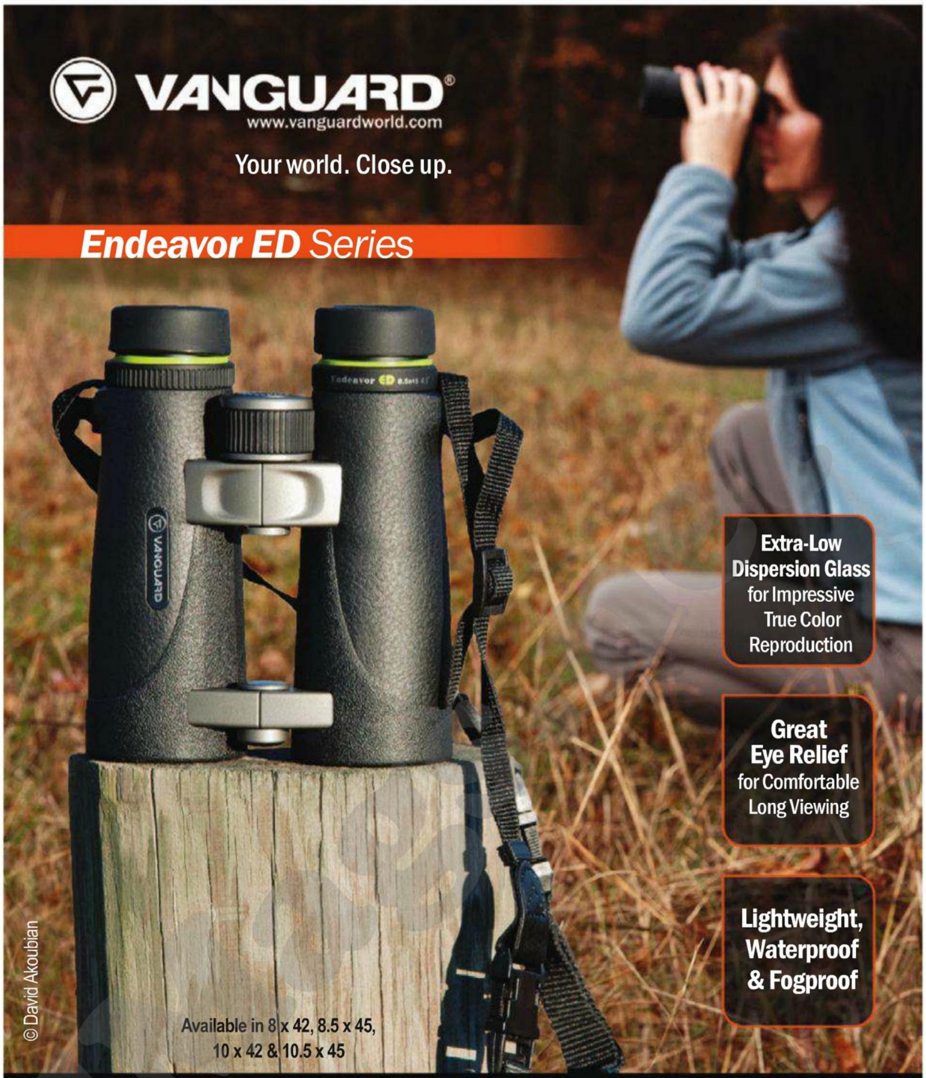

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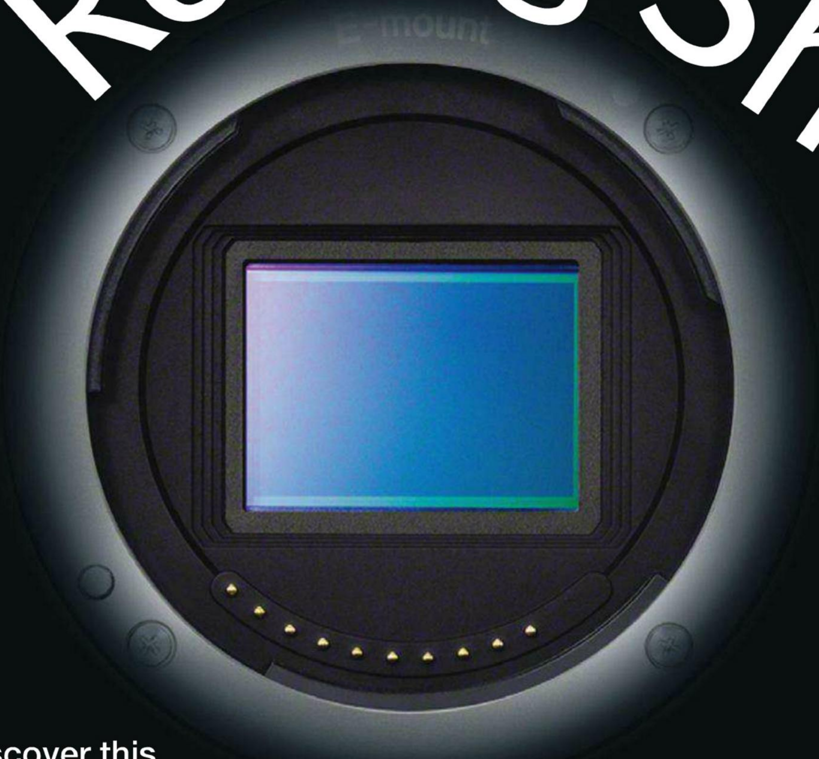

Discover this little-known artifact that's generated from some digital cameras when the conditions are exactly right

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ABOVE: A CMOS sensor like this is the cause of artifacts like wobble, skew, smear and split exposure. This type of sensor captures image data by line scan so there's a slight delay as data is scanned across the frame. The delay is miniscule, but in very fast-moving subjects, you can sometimes see strange results. This doesn't mean that CMOS sensors are somehow inferior, but they do exhibit this quirk. Even high-end, full-frame DSLRs like the popular Canon EOS 5D Mark II and the Nikon D700 aren't immune.

We recently received an email from a contributor who had taken a photograph out of the window of a small airplane. The contributor, inspired by a couple of recent articles on iPhone photography, was using a smartphone to take the photograph, and he got an interesting effect. The propeller blades are seriously distorted, but it's not just blur from a slow shutter. The distortion is different in various parts of the frame. The photograph was taken with an iPhone, but you'll see the same effect in images taken from many cameras, including high-end DSLRs. So what's going on?

The phenomenon is due to the way CMOS sensors record images. Think back to film. The camera shutter opens, allowing light to hit a piece of light-sensitive film more or less all at once (there are exceptions with fast shutter speeds and focal plane shutters). With CMOS sensors, the image is recorded through line scan, which also is called rolling shutter. This means that the image

(Cont'd on page 118)

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Rex Bryngelson

Adventure In Patagonia

April 14-29, 2012

Locations include Patagonia, Chile and Argentina. This one-of-a-kind photo safari visits all of Patagonia's most spectacular mountain regions, best wildlife viewing spots and remote estancias and National Parks. Tours are led by American photographer/guide Rex Bryngelson, a full-time resident of Patagonia for more than 20 years. The 16-day tour is modestly priced, and the unique itinerary offers the widest array of photographic destinations found on any Patagonian photography tour. Participants will visit Torres del Paine, Fitzroy and the Moreno Glacier, but will also explore unknown corners of Argentina's Santa Cruz Province and Chile's remote Aysén Region, including the exotic Marble Caves of Lago General Carrera, the Northern Patagonian Ice Field, Cerro San Valentin (Patagonia's highest summit) and the future Patagonia National Park.

For more information, contact: Rex Bryngelson, rex@patagoniaphoto.com, www.patagoniaphoto.com.

African Photo Safaris

January-September 2011 & 2012

Join Professional Wildlife Photographer Paul Renner on an expedition into the very heart of the African wilderness. Born and raised in Tanzania, Renner has a natural connection with the environment, people and language that make Africa a truly unique experience. Equipped with a native fluency in Swahili, Renner leads travelers on multiple game drives that offer the opportunity to see a wide variety of wildlife each day. From the plains of the Serengeti to the wildebeest migration crossing the Mara River or encounters with Rwandan mountain gorillas, expeditions with Renner Safaris allow photographers and travelers to capture their iconic images of Africa's amazing animals and landscapes. You'll stay at luxury safari lodges and permanent tented camps, with no more than three passengers per nine-passenger vehicle.

For more information, contact: Paul Renner, Renner Safaris, (949) 295-3136, paulrenner3@cox.net, www.rennersafaris.com.

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For more information, contact: Travel Corporation India (TCI), www.tcindia.com.

Midway Atoll Refuge

2012

A national treasure and one of the top wildlife spectacles on earth! Few photographers have had the pleasure to access such a variety of seabirds in one place, with amazing flexibility to observe them at your leisure. By special permit, your small group will be the only guests. Eighteen seabird species numbering over two million birds nest on Midway annually. Half are Laysan albatross, with the rest being red-tailed tropic birds; Laysan ducks; white, gray-backed and sooty terns; black and brown noddies; red-footed boobies and great frigate birds. The clear-blue waters and sandy beaches surrounding Midway are home to spinner dolphins, green sea turtles and endangered Hawaiian monk seals. Departures in 2012 include: March 19-27, March 26-April 3, April 2-10, April 9-17.

For more information, contact: Joseph Van Os Photo Safaris, (206) 463-5383, info@photosafaris.com, www.photosafaris.com.

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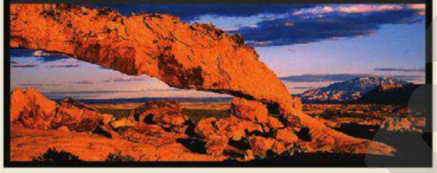

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Apr 13-18 - Northern Arizona
May 05-09 - FL Everglades Experience
May 16-20 - Monterey & CA Coast
May 19-24 - Kauai, HI
May 23-28 - Yosemite NP, CA
June 17-25 - SE Alaska Boat Trip
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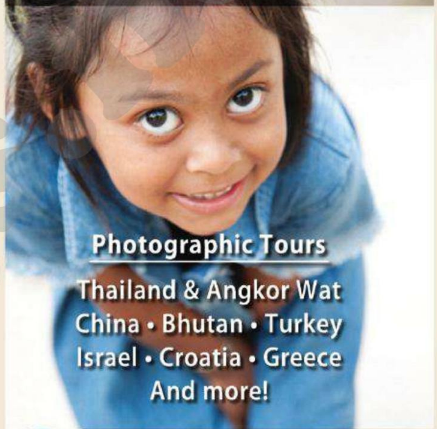

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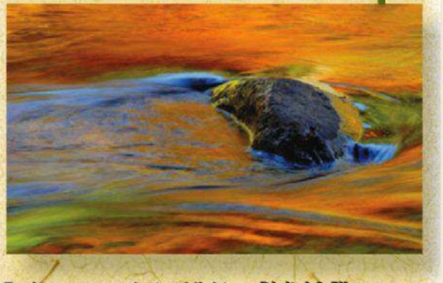

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John Baker

New Zealand With Travel Images

December 2011

Idaho-based British photographer John Baker will be leading another New Zealand photography tour in December of 2011. This is springtime in the upside-down world of the Kiwi, Maori and "Long White Cloud," and subsequently, several regions of South Island will be colorfully illuminated by millions of wild lupine. Starting and finishing in the southern hemisphere's adventure capital of Queenstown, the itinerary will include places such as Arrowtown, Wanaka, Mount Cook—Australasia's highest peak, Lake Tekapo, the white-stoned town of Oamaru, the Moeraki Boulders and the Otago peninsula, where participants will photograph the royal albatross, yellow-eyed penguin and more. Moving westward via the Nugget Point lighthouse and Purakaunui Falls, the seven-person group will be at Milford Sound as dawn breaks, and follow that up with a cruise out to the Tasman Sea and back, photographing waterfalls, spectacular mountain peaks and marine life. Then on to Lake Manapouri, Lake Wakatipu and a remote valley where several *Lord Of The Rings* scenes were shot, before concluding with more Queenstown-area images and a Maori performance and "Hangi" to conclude the trip.

For more information contact: John Baker, Travel Images, (800) 325-8320, phototours@travelimages.com, www.travelimages.com.

Nature's Image Workshops

Year-Round

No need to travel to extreme places to get exciting prize-winning photographs. The eastern U.S. offers so much, and it's the stomping ground of Nature's Image Photography Workshops! They love sharing their knowledge, secret places and treasures. They love teaching how to see more than the obvious, how to think creatively, and how to use your camera and lenses to their full potential—becoming one with your camera. In other words, they love teaching and seeing participants progress. Learning never stops, regardless of your skill level. They work with each individual at his/her starting point. They spend all waking hours with their class, instructing in the field, demonstrating technique and equipment, critiquing, encouraging discussions, conducting slide shows, developing camaraderie, and teaching you how to "take" a good picture in the camera instead of "making" a picture in front of your computer. Their goal: your leaving the workshop at a skill level that's a giant leap ahead of where you were upon arrival while having fun. Their three fall workshops will take in fall colors, scenics, abstracts, waterfalls and birds. There's always something for everyone.

For more information, contact: Bill and Linda Lane, Nature's Image Photography Field Workshops, (804) 883-7740, billlindaphoto@mindspring.com, www.lanephotoworkshops.com.

Hawaii Photo Seminars

April 7-14, 2012

For the 23rd year, Hui Ho'olana Retreat Center offers a photographic intensive workshop, "Rekindling the Creative Spirit" to venture deeper into the art of photography and return to "old Hawaii." *National Geographic* freelance photographers Rik Cooke and Dewitt Jones (*OP* columnist), international photographer and author Theresa Airey and Photoshop whiz Jonathan Kingston will take you to explore the incredible beauty of Molokai—from the highest sea cliffs in the world and the most sacred valleys to the warm waters of secluded beaches. In the lab, you'll manage digital files, learning new and exciting techniques in Photoshop to maximize and communicate what you've experienced. This workshop is about expanding your creative vision and encouraging each other as you refine and define you connection with your environment, yourselves and your photography. Enrollment is limited to 18.

For more information contact: Rik and Bronwyn Cooke, (808) 567-6430, hui@aloha.net, www.huiho.org.

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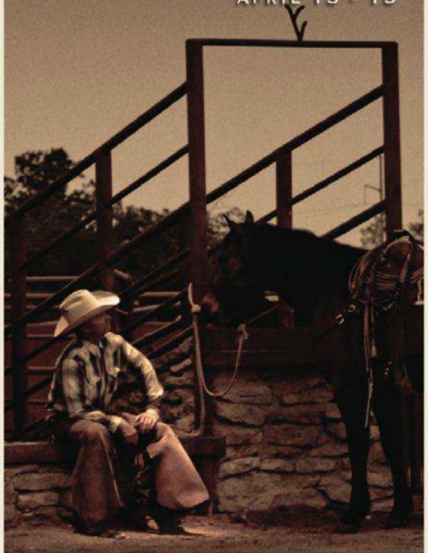

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2011 "Footsteps" Photography Workshops

For 2011, we're scheduling a few "Footsteps" Workshops that will follow in Don Gale's footsteps to some of his favorite places to shoot. If you've been on Don's workshops this will be a chance to get some great shots & reminisce. If this is your first time, you'll get to learn & apply the techniques that Don taught to get great images. Join us for nature shooting at it's finest.

April 15-18 Cambria, CA in the Spring
Right in the middle of the wildflower season with rolling, green hills & rugged coastal scenes. Also, an amazing variety of birds, otters and seals.

July 15-18 Eastern Sierra in the Summer
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Oct. 28-31 Yosemite Valley in the Fall
The valley floor begins to quiet down for year's end, the emergence of the subtle color change of Fall makes this place even more unreal.

Dec. 27-30 Death Valley in the Winter
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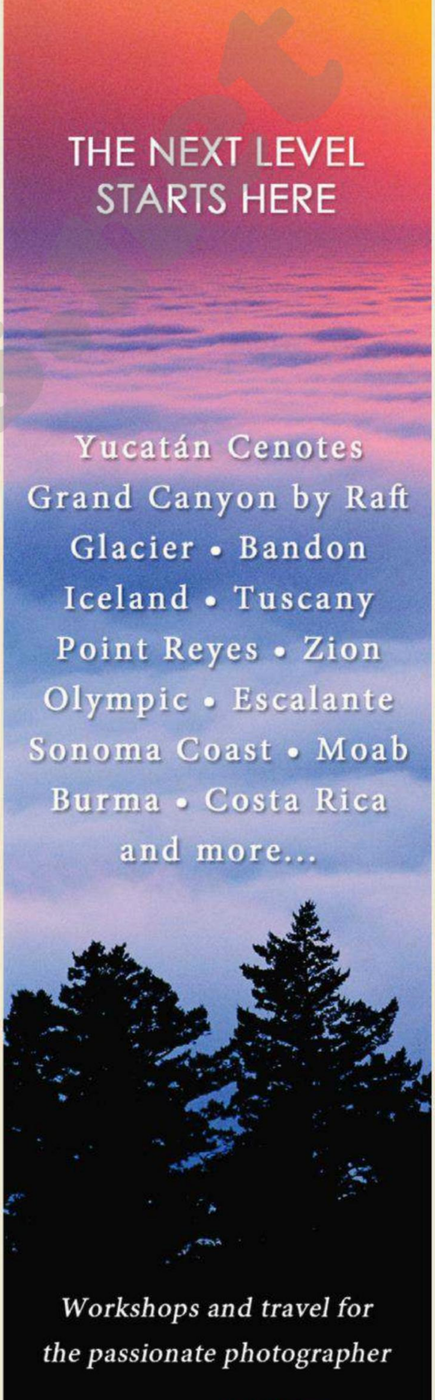

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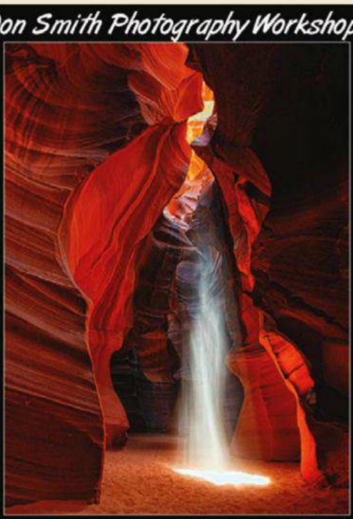

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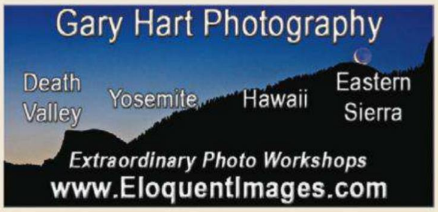

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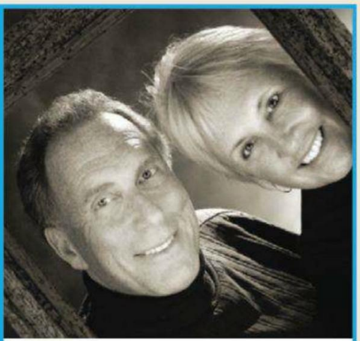

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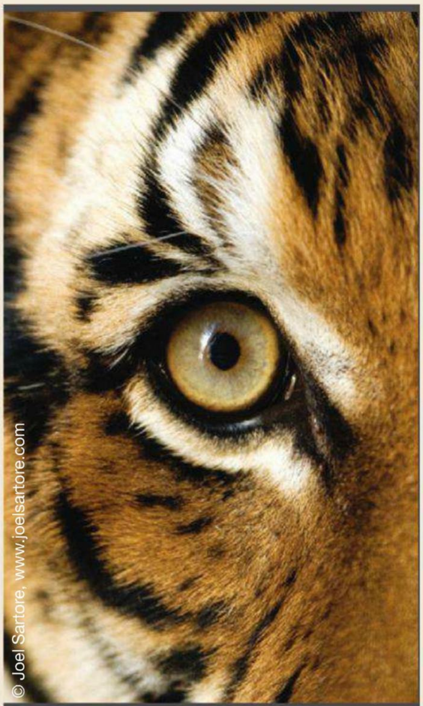

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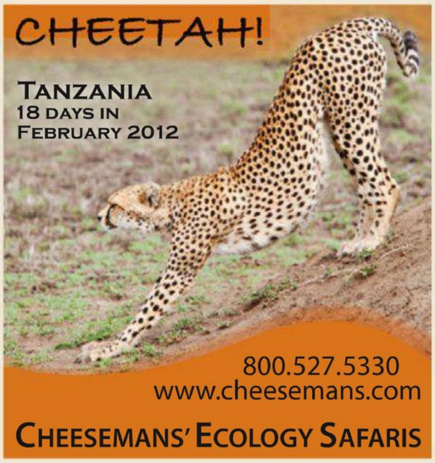
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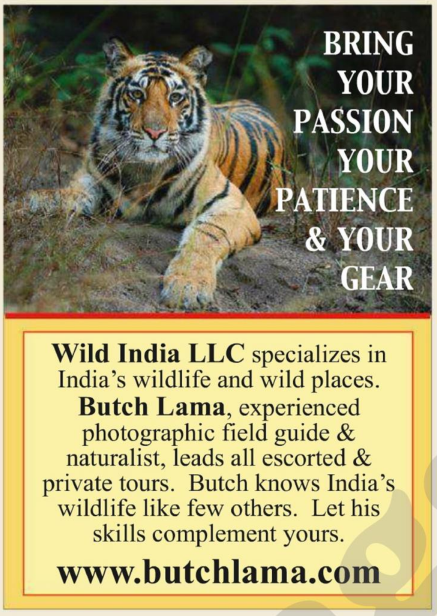
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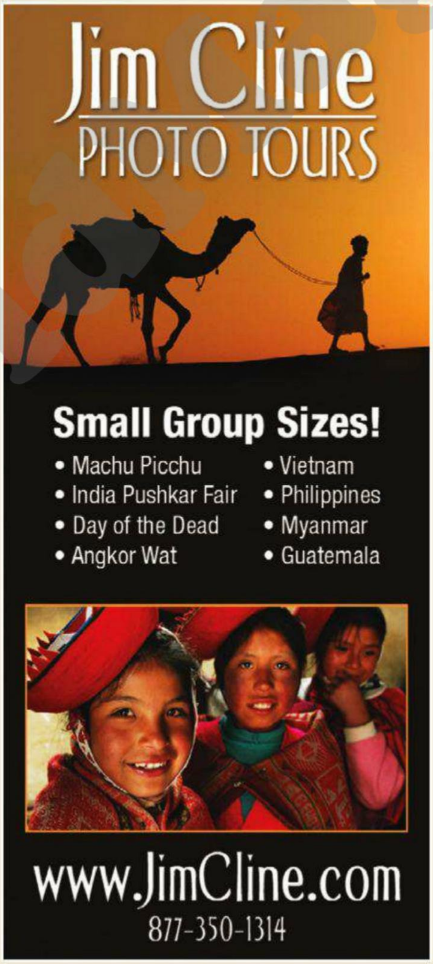
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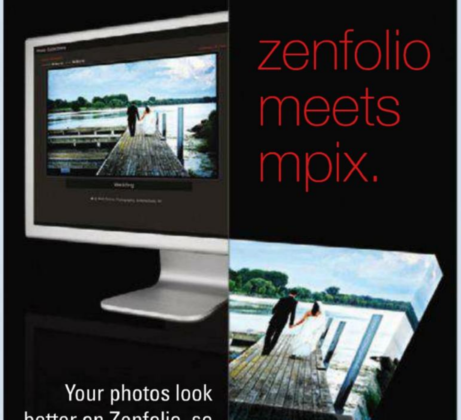

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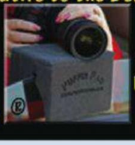

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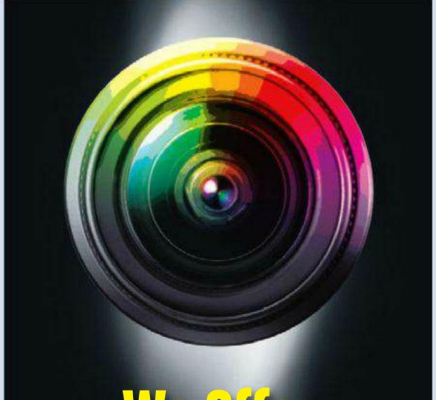

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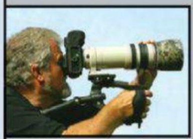

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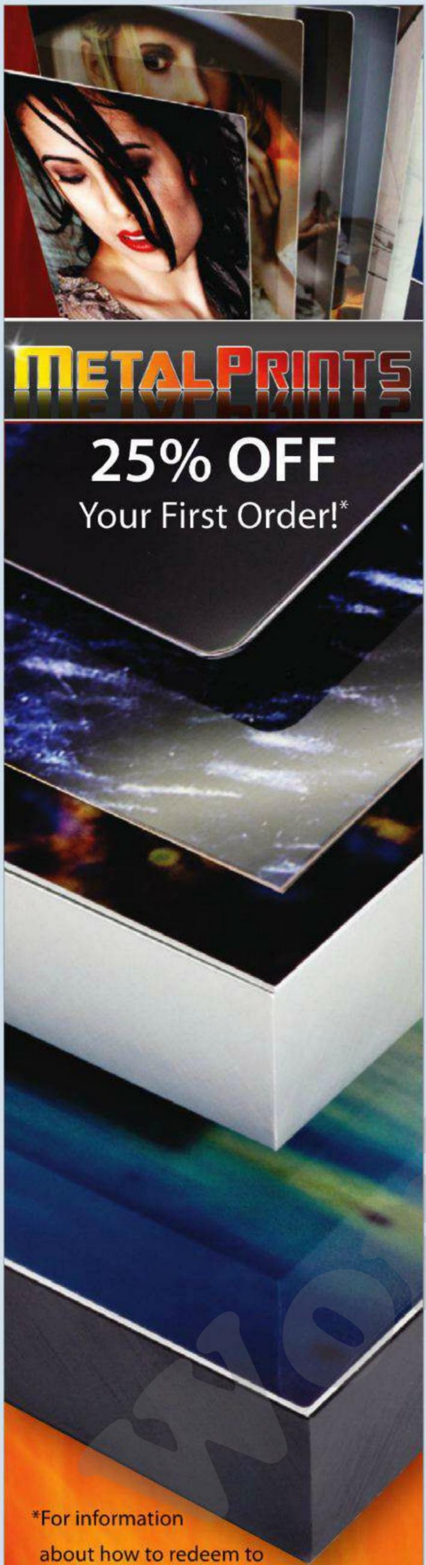
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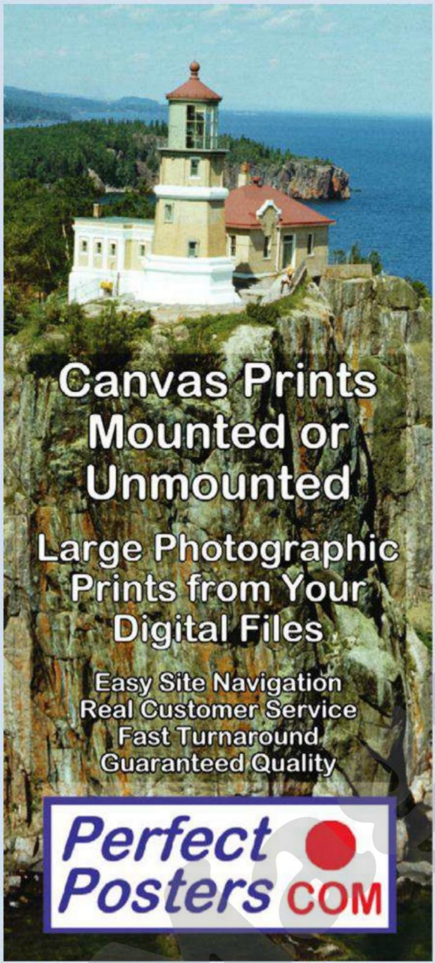
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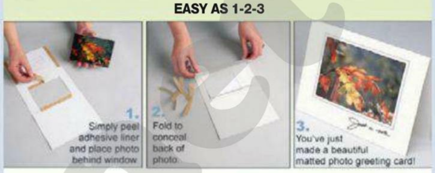
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D7000

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The new Olympus PEN E-PL1 is truly greater than the sum of its parts. This surprisingly small camera body is packed with technology normally found in bigger, bulkier cameras and High Definition (HD) camcorders. With features like interchangeable lenses, the new Live Guide and one-touch HD video - the E-PL1 is an easy-to-use and portable all-in-one package that travels with you to capture all the details of your life.

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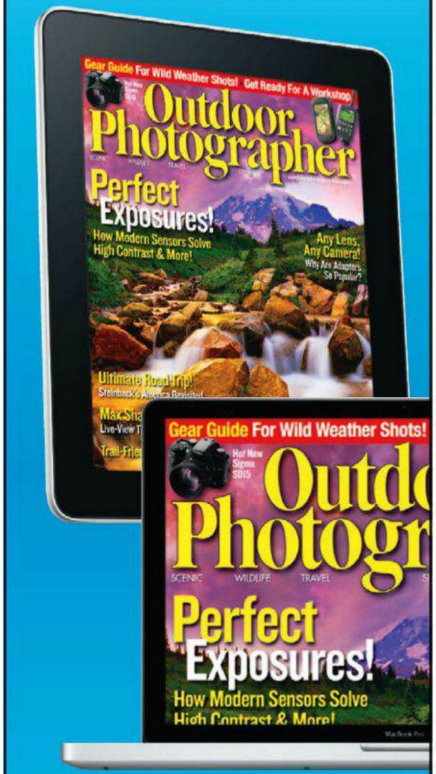
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MIRRORLESS CAMERAS

(Cont'd from page 89)

top mirrorless models have improved considerably. We just tested the new Olympus E-P3 and, with its touch-screen AF, found that it focused and fired immediately upon our touching the desired point on the OLED monitor. On stationary subjects, this may well be, as Olympus claims, quicker than phase-detection AF; we're eager to get a long lens to try it on action subjects.

In Live View mode, most DSLRs use contrast-based AF rather than the quicker phase-detection systems (newer Sony models excepted), and these DSLR contrast-based systems are much slower than the AF in today's mirrorless cameras. (Sony SLT cameras utilize a translucent mirror that permits using phase-detection AF in Live View mode, even for video shooting.)

The full-time Live View operation of the mirrorless cameras also provides excellent manual-focusing capability. You can zoom in on the critical part of the subject or scene on the big LCD or OLED monitor and carefully examine the enlarged area.

Advantage: DSLRs. In bright, high-contrast conditions, a contrast-detect system is very fast, but taken across the broad spectrum of lighting situations a nature photograph is likely to face, DSLR phase-detect AF wins.

Battery Life

Since the mirrorless cameras get their small size in part by doing away with an optical viewfinder system, they operate in Live View mode at all times, like point-and-shoot digital cameras. This means they're harder on batteries than DSLRs, and due to their smaller size, the mirrorless cameras must use smaller batteries than DSLRs. The result is that the mirrorless cameras get far fewer shots per battery charge than a DSLR. So you'll have to buy, charge and carry more batteries with a mirrorless camera to get the same number of shots, which is something to consider for long days in the field or when traveling.

Advantage: DSLRs. Generally, DSLRs get more shots per charge.

Stabilization

While much landscape and wildlife photography is done from a tripod, a lot is done handheld. Freeing the camera from the tripod gives you more freedom to quickly compose and shoot those decisive moments—and save the hassle of carting around a tripod. Of course, you then lose the tripod's steadiness and risk a blurred image due to camera shake.

Some DSLRs provide in-camera, sensor-shift image stabilization, which moves the image sensor to counter the effects of camera shake. This system works with all lenses, but doesn't stabilize the viewfinder image. Other DSLRs offer some lenses with built-in stabilizers that shift lens elements to counter camera-shake-induced blur. This gives you the advantage of stabilizing both the recorded image and what you see in the finder, and can be optimized for the particular lens, but you get stabilization only with lenses that contain stabilizers.

The situation is the same with the mirrorless cameras. Olympus, Panasonic and Pentax offer sensor-shift stabilization, while Samsung and Sony offer some stabilized lenses for their mirrorless cameras. If you shoot handheld, you'll want stabilization; we've found both systems (sensor-shift and lens-shift) to be quite effective.

Tie: Because there are so many stabilization technologies involved, we can't give DSLRs or mirrorless, interchangeable-lens cameras a clear advantage here.

HD Video

All of the mirrorless, interchangeable-lens cameras can shoot high-quality video, 720 HD or 1080 full HD. Having the ability to shoot high-quality still images and HD video in a single tiny package is a wonderful thing—the video adds new ways of capturing and displaying nature and its moods and critters, with motion and sound. If your DSLR doesn't do video, you might consider a mirrorless model as an easily carried video camera that also can serve as an excellent backup to your still camera.

Tie: All things being equal, you can get excellent HD video from DSLRs or mirrorless, interchangeable-lens cameras. As a backup still camera that can shoot HD video, we give mirrorless cameras an advantage. OP

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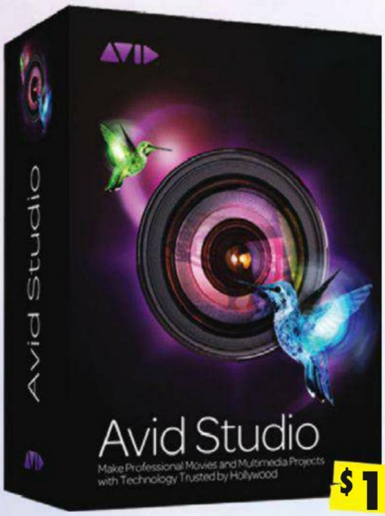
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Marshall V-LCD50-HDMI 5" 800 x 480 Camera-Top / Portable Field Monitor with HDMI

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PEOPLE IN COLOR

(Cont'd from page 56)

normal to me. But I'm not trying to mythologize cultures. Exotic and remote mean so much to so many people. Someone who has never left Los Angeles will find Santa Fe exotic. I don't think there are many untouched places left."

So she's documenting what she does see. The Naga people, who were once headhunters, have embraced Christianity—but have old skulls hidden among family. There are tribal children who listen to stories from the tattooed and scarred elders—but tune into *Naga Idol* on television. Says Wier, "Of course I want to document that culture—the elders who are the last tattooed—but I'm more interested in how the youth are going to retain their cultural traditions and still make their own way in this world."

To punctuate this point, Wier took a photograph of a young man in khaki pants as part of the Outer India project. This boy, a member of the tribe's royal family, is adorned with beads and the trophies of a great ancient hunter. They were probably passed down through generations, from his tattooed father and other elder tribesmen. And his underwear rises above his pants, like an adolescent boy in Any City, USA.

Nevada Wier sees in color—in her favorite blues, which she seeks to bring out in tribal cultures dominated by reds and earthy browns. She sees in desaturated grays and subtle hues manipulated by light. She even sees color that's unseen to the human eye through infrared photography. She travels and photographs and then she packs up her bags again and comes home. And then we can see in color, too. **OP**

Michael Clark

*You can see images from **Nevada Wier**'s Outer India project, learn about photo tours and workshops, and see her incredible collection of global images on her website at www.nevadawier.com.*

WORKSHOP DIARY

(Cont'd from page 85)

image of the rice terraces we will photograph in the morning. He tells us to look for the balances and the power of the line, and when we encounter people working in the paddies, to use them effectively in our compositions to give a sense of scale.

The next morning, with a box breakfast in hand, we board our bus to Duoyishu Village for sunrise. A day above the rice terraces from different viewpoints yields much stronger results armed with the previous night's suggestions. Wolfe also advises use of a polarizer to change the reflections in the shallow water of each terrace. The digital world hasn't eliminated the need for graduated ND filters and polarizers.

We spend the night downloading, editing, having our images critiqued, then preparing for our next stop—one that has been at the top of many of my classmates' and my destination wish list for a long time—Guilin.

After a bus ride back to Kunming and a two-hour flight, we arrive in 2,000-year-old Guilin, located on the west bank of the Li River. Its most notable features are the unique mountain formations that dot its landscape.

Part of the lure of this area in China are the small towns and villages of Guilin, such as Fuli, surrounded on one side by the Li River and three sides by mountains, a town particularly popular with artists. In the afternoon, we explore the Li River and its tributaries by boat. We settle in at our hotel in nearby Yangshuo, and in the evening head to an outdoor arena to experience "Impression Liu Sanjie," a musical extravaganza on the Li River codirected by Zhang Yimou (known for creating the opening ceremony production at the Beijing Olympics), Wang Chaoge and Fan Yue.

After a final day exploring the Guilin area, topped off by a photo session with cormorant fishermen, we head back to the hotel, where Wolfe critiques our top selections from the entire trip. Group critiques not only give workshop participants valuable feedback from Wolfe, but also a chance to see how different imagery can be from the unique perspectives of the other students. Jay Goodrich follows Wolfe with a presentation on how to get the most out of our images using Photoshop Lightroom.

Wolfe avoids the downside of workshop participants vying for the same shot by limiting the maximum amount of students. When it comes to a photography workshop, size matters. The smaller, the better, is the rule. A good workshop gives students the room to work on their own, without all of them encircling the same subject matter.

When one has the opportunity to share the road with master photographers such as Wolfe, who are so willing to share their knowledge, acute eye and experiences, it's vital to take them up on their suggestions.

Galen Rowell told me a story that demonstrates that while showing up is half the battle, you need to take advantage of opportunities when they arrive. In Tibet, after leading his workshop students on a long day of trekking, Rowell and his group witnessed a perfect rainbow arching down from the heavens. He asked, "Does everyone want to chase rainbows?" Too exhausted, none of his students joined him. He took off on foot down a road to line up one end of the rainbow with Lhasa's Potala Palace, where he captured one of his most memorable shots. The obvious lesson: While a master photographer can lead a group toward great opportunities, it's still the student who must take the drink from this fountain of knowledge.

We worked hard over those two weeks, and while the early wake-up calls were seldom appreciated, the photographic opportunities were. For many, the most important thing to take away from a workshop is to understand how thoroughly Wolfe, like other photographers at the top of their game, work a subject—how hard they push themselves, physically and mentally—and to see how they see what a lesser-trained or lesser-disciplined eye might miss.

A Chinese saying goes, "A journey of a thousand miles begins with one step." For those seeking to improve their photography, joining a workshop with a top pro can be a great leap forward. **OP**

*To learn more about **Art Wolfe**'s workshops, visit www.artwolfe.com.*

MORE On The Web

Explore OP on the web for more resources on exciting workshops and photo tours from around the world. See a list of popular workshops at **www.outdoorphotographer.com/travelandworkshops**!

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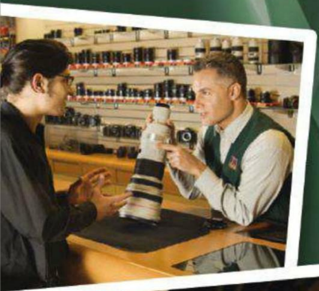

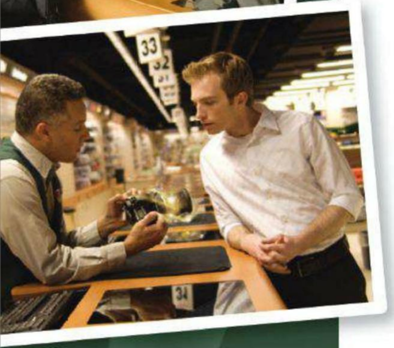

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4GB	17.95	34.99	—	9.95	14.50	—	—	24.50	—	—	19.95	—	—	—
8GB	22.95	49.99	79.99	17.50	20.95	—	—	28.35	45.95	74.95	34.95	54.95	—	—
16GB	39.99	89.99	144.99	—	—	32.74	69.88	49.95	74.95	120.83	59.36	94.95	149.99	—
32GB	87.95	139.99	269.99	—	—	69.95	143.20	—	137.95	234.22	—	163.06	269.99	—
64GB	—	299.95	—	—	—	—	—	—	—	—	—	—	549.99	—
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SDXC Extended Capacity

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Note: Not all devices support SDXC cards *** UHS-1**

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SD HC Secure Digital High Capacity

	Delkin			Kingston				Lexar			Panasonic		Sandisk				Sony		
	Pro Class 6	Pro Class 10	Micro	Standard Class 4	Standard Class 6	Ultimate X Class 10	Micro Class 4 Multi Kit	Std Class 4	Platinum II 100x	Professional Class 10 133x	Silver Class 4 20 MBs	Gold Class 10	Std Class 4	Ultra Class 4 15 MBs	Extreme	Micro Class 4	Standard Class 4	Standard Class 10	Micro Class 4
4GB	9.09	19.99	12.95	—	9.99	—	9.95	7.99	10.49	—	9.95	24.50*	7.99	10.95	13.95	7.99	7.99	—	8.95
8GB	17.50	34.99	22.50	12.16	14.95	15.99	13.99	14.95	15.79	24.47	19.50	—	14.95	19.99	23.95	14.99	14.99	24.50	14.49
16GB	34.95	64.99	34.50	24.95	27.95	24.50	28.95	21.99	28.36	39.95	34.99	—	27.99	28.99	46.95	27.99	29.95	32.50	—
32GB	—	124.99	—	49.95	—	52.95	59.95	42.50	52.51	69.95	—	*** UHS-1**	49.99	61.99	97.95	74.95	—	64.95	—

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AT-3410	BA-00T	6.6 lb	59.4"	16.5"	3.4 lb	#OBAT3410BA00	**$224.95**
AT-3420	BA-0T	11 lb	62.6"	17.7"	4.2 lb	#OBAT3420BA0T	**$259.95**
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CT-3400	BB-0T	12.4 lb	56.7"	15"	3 lb	#OBCT3400BB0T	**$349.95**
CT-3410	BB-0T	16.8 lb	59.4"	16.5"	3 lb	#OBCT3410BB0T	**$399.95**
CT-3420	BB-1T	22 lb	62.8"	17.7"	4 lb	#OBCT3420BB1T	**$449.95**
CT-3500	BB-0T	12.4 lb	53.3"	12.8"	2.5 lb	#OBCT3500BB0T	**$349.95**
CT-3510	BB-0T	16.8 lb	60.6"	15.5"	3.2 lb	#OBCT3510BB0T	**$399.95**
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- Weather resistant
- Quick-Shift Focus System
- Min. focus: 1.3'
- 62mm filter diameter
- Weight: 14.3 oz

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- Weight: 15.6 oz

SONY

16-80mm f/3.5-4.5 Carl Zeiss T* DT Digital Lens

- ***Designed exclusively for Digital SLRs***
- Ideal for snapshots, portraits, interiors, or outdoor scenery
- 35mm equiv: 24-120mm
- Min. focus: 13.8"
- 62mm filter diameter
- Weight: 15.5 oz

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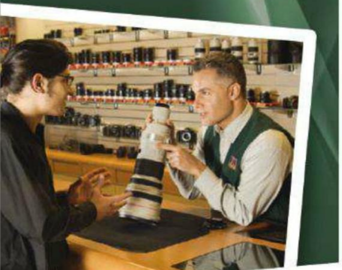

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Canon Digital Rebel T3 DSLR

- 2.7" Clear View LCD with Live View Function
- Uses Canon EF Lenses (1.6x factor)
- SDHC/SDXC Card Slot
- 3 fps Continuous Shooting
- ISO 100-6400
- Full HD Movie Mode
- RAW + JPEG Files
- Basic + Function / Creative Auto
- 63 Zone Dual-Layer System/9 Point AF

Kit with 18-55mm IS........................#CAEDRT3K

12 Mega Pixels

Canon Digital Rebel T3i DSLR

- 3" Clear View Vari-Angle LCD
- Uses Canon EF Lenses (1.6x factor)
- SDHC/SDXC Card Slot
- 3.7 fps Continuous Shooting
- ISO 100-6400
- RAW + JPEG Files
- Full HD Movie Mode with Manual Exposure
- 63 Zone Dual-Layer System/9 Point AF

Body Only...#CAEDRT3I
Kit with 18-55mm IS.......................#CAEDRT3IK

18 Mega Pixels

Canon EOS-60D DSLR

- 1920 x 1080 HD Video Capture
- DIGIC 4 Image Processor
- SD/SDHC/SDXC Card Slot
- Works with all Canon EF & EF-S Lenses
- Vari-Angle Clear View 3.0" Flip-Out LCD
- HDMI Output to HDTV
- 5.3 fps Continuous Shooting
- ISO 6400 - Expandable to 12800

Body Only..#CAE60D
Kit with 18-135mm IS................#CAE60D18135
Kit with 18-200mm IS ....#CAE60D18200

18 Mega Pixels

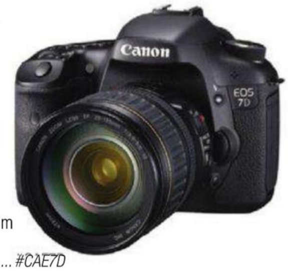
Canon EOS-5D Mark II DSLR

- Record HD Video
- 1080p Movie Mode
- Full-Frame Sensor
- Live View Mode
- 3" High Resolution LCD Screen
- Uses Canon EF Lenses
- CF, MD Card Slot
- Dust and Weather Resistant
- Self-Cleaning Sensor
- 3.9 fps Burst Mode
- 9-point AF Sensor Array
- ISO Range 50-25600

Body Only..#CAE5D2
Kit with 24-105mm IS................#CAE5D224105

21 Mega Pixels

Canon EOS-7D DSLR



- Record HD Video
- 3" LCD
- Uses Canon EF Lenses
- CF, MD Card Slot
- Dust and Weather Resistant
- Selectable Video Exposure and Frame Rates
- ISO 100-6400 (expandable to 12800)
- 8 fps Burst Mode
- 19-Point, All Cross-Type AF System

Body Only...#CAE7D
Kit with 18-135mm IS...................#CAE7D18135
Kit with 28-135mm IS...................#CAE7D28135

18 Mega Pixels

Canon EOS-1D Mark IV DSLR

- HD Video Recording
- Selectable Video Exposure + Frame Rates
- Self-Cleaning Sensor
- 3" LCD Monitor
- Uses Canon EF Lenses
- SD/SDHC & CF card slots
- 10 fps Burst Mode
- Dust and Weather Resistant
- 45 Point AF System
- High Sensitivity (ISO 102,400)

*Body Only..#CAE1D4**

16 Mega Pixels

Canon SLR Lenses and Flashes

CALL FOR AVAILABLE REBATES!

EOS Flash System (USA)

	IMP	USA
270EX		
270EX II		
430EX II		
580EX II		
MR-14EX Ringlight		
MT-24EX Twin Flash		

EF-S Lenses for Digital Only

Compatible with the 20D, 30D, 40D, 50D & Digital Rebel only

	IMP	USA
60/2.8 USM Macro (52ø)		
10-22/3.5-4.5 USM (77ø)		
15-85/3.5-5.6 IS USM (72ø)		
17-55/2.8 IS USM (67ø)		
17-85/4-5.6 IS USM (67ø)		
18-55/3.5-5.6 IS (58ø)		
18-135/3.5-5.6 IS (67ø)		
18-200/3.5-5.6 IS (72ø)		
55-250/4.0-5.6 IS USM (58ø)		

EF Lenses

	IMP	USA
15/2.8		
20/2.8 USM (72ø)		
24/2.8 (58ø)		
28/2.8 (52ø)		
28/1.8 USM (58ø)		
35/2 (52ø)		
50/1.8 (52ø)		
50/2.5 Macro (52ø)		
50/1.4 USM (58ø)		
MP-E 65/2.8 1x-5x Macro (58ø)		
85/1.8 USM (58ø)		
100/2 USM (58ø)		
100/2.8 USM Macro (58ø)		
135/2.8 (52ø)		
28-135/3.5-5.6 IS USM (72ø)		
70-300/4-5.6 IS USM (58ø)		
70-300/4.5-5.6 DO IS USM (58ø)		
75-300/4.0-5.6 III (58ø)		
75-300/4.0-5.6 III USM (58ø)		

TS-E MF Lenses

	IMP	USA
17/4.0 "L"		
24/3.5 "L" II		
45/2.8		
90/2.8		

EF "L" Lenses

	IMP	USA
14/2.8 USM II		
24/1.4 II (77ø)		
35/1.4 USM (72ø)		
50/1.2 USM (72ø)		
85/1.2 USM II (72ø)		
100/2.8 IS USM Macro (67ø)		

EF "L" Lenses

	IMP	USA
135/2.0 USM (72ø)		
180/3.5 USM Macro (72ø)		
200/2.8 USM (72ø)		
200/2.0 IS USM (52ø)		
300/4.0 IS USM (77ø)		
300/2.8 IS USM (52ø rear)		
400/5.6 USM (77ø)		
400/2.8 IS (52ø rear)		
500/4 IS USM (52ø rear)		
600/4.0 IS (52ø rear)		
8-15/4.0 Fish-eye USM		
16-35/2.8 USM II (82ø)		
17-40/4.0 USM (77ø)		
24-70/2.8 USM (77ø)		
24-105/4 IS USM (77ø)		
28-300/3.5-5.6 IS USM (77ø)		
70-200/4.0 USM (67ø)		
70-200/4.0 IS USM (77ø)		
70-200/2.8 USM (77ø)		
70-200/2.8 IS II USM (77ø)		
100-400/4.5-5.6 IS USM (77ø)		
1.4x II Teleconverter		
1.4x III Teleconverter		
2x II Teleconverter		
2x III Teleconverter		

USA = Imported and Warranted by Canon USA **IMP =** Imported and Warranted by B&H (not qualified for Canon USA Rebates and Warranties)

Canon 580 EX II
Shoe Mount Flash

- Dust- & water-resistance
- Guide No. 190'
- Metal Hot Shoe
- E-TTL II, E-TTI, TTL & Manual
- Bounce & Swivel Head
- Zoom Head (24-105mm)
- Weight 13.2 oz

Canon 10-22mm f/3.5-4.5 EF-S USM
Digital Lens

- ***Designed exclusively for Digital SLRs***
- 35mm equivalent 16-35mm
- Min. Focus 9.5"
- 3 aspherical lens elements
- 3.5-27 f/Stop Range
- 77mm filter diameter
- Weight 13.6 oz

Canon 24-70mm f/2.8 EF "L" USM
Zoom Lens

- Sealed and gasketed against dust and moisture
- Internal Focusing
- UD Element
- Two Aspherical Elements
- 2.8-22 f/Stop Range
- Focus 1.25' to Infinity
- 77mm filter diameter
- Weight 33.6 oz

Canon 70-200mm f/2.8 EF "L" IS II USM
Telephoto-Zoom Lens

- Improved Optical Image Stabilization provides up to 4 stops correction
- Min. Focus 3.9'
- Dust- and moisture-resistant
- 77mm filter diameter
- 52.56 oz

Nikon D3000 DSLR

- Self-Cleaning Sensor
- 3" LCD Monitor
- Accepts Nikon AF Lenses (1.5x factor)
- ISO 100-1600
- Fast Shutter Response
- SD, SDHC Card Slot
- In-camera Editing
- 3 fps Burst Mode
- 11-point Autofocus System
- Nikon Inc. limited warranty included

Kit with 18-55mm VR DX............#NID30001855

Nikon TOTAL IMAGING SYSTEM DEALER 10 Mega Pixels

Nikon D3100 DSLR

- HD 1080p Video w/ Sound & Autofocus
- 3" LCD • Live View
- Uses Nikon AF Lenses (1.5x factor)
- SD/SDHC Card Slot
- 11-point Autofocus
- 3 Frames per Second Shooting
- ISO 100 to 3200 (Expand to 12800-Hi2)
- Self Cleaning Sensor
- Nikon Inc. limited warranty included

Kit with 18-55mm VR.................#NID31001855

Nikon TOTAL IMAGING SYSTEM DEALER 14 Mega Pixels

Nikon D5100 DSLR

- 1080p HD Movies with Full Time Autofocus
- 3.0" Vari-angle LCD
- Uses Nikon AF Lenses (1.5x factor)
- SD/SDHC Card Slot
- In-Camera Special Effects Mode
- In-Camera HDR (High Dynamic Range)
- Fast 11-Point Autofocus System
- ISO Sensitivity 100-6400
- Nikon Inc. limited warranty included

Body Only..#NID5100
Kit with 18-55mm VR.................#NID51001855

Nikon TOTAL IMAGING SYSTEM DEALER 16 Mega Pixels

Nikon D7000 DSLR

- EXPEED 2 Image Processor
- 1080p HD Video Capture
- RAW + JPEG Still Image Capture
- 3" LCD Monitor
- Accepts Nikon AF Lenses (1.5x factor)
- Twin SD/SDHC/SDXC Card Slots
- 39-point AF System
- RGB 3D Matrix Metering System
- i-TTL Flash + Speedlight Compatibility
- Nikon Inc. limited warranty included

Body Only..#NID7000

Nikon TOTAL IMAGING SYSTEM DEALER 16 Mega Pixels

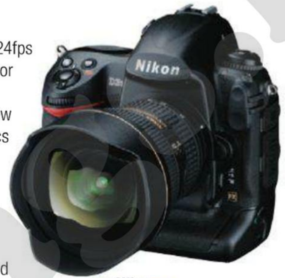
Nikon D700 DSLR

- Self Cleaning Sensor • 5 fps Burst
- FX-format CMOS (full frame)
- 3" VGA LCD Monitor • Live View
- 51-point AF System
- Uses Nikon AF Lenses
- CompactFlash Card Slot
- Dust and Water Resistant
- Active D-Lighting Mode
- HDMI Video Out • ISO 6400
- Nikon Inc. limited warranty included

Body Only..#NID700
Kit with 24-120mm VR................#NID70024120

Nikon TOTAL IMAGING SYSTEM DEALER 12 Mega Pixels

Nikon D3s DSLR



- RAW/JPEGs & 720p HD Video @ 24fps
- FX-format (full-frame) CMOS Sensor
- In-Camera RAW Processing
- 3" 920,000-Dot LCD with Live View
- Compatible with Most Nikkor Optics
- Built Tough, Fully Weathersealed
- ISO Sensitivity up to 102,400
- Buffers Up to 48 RAW or 130 large JPEGs
- Dual CF Card Slots
- Nikon Inc. limited warranty included

Body Only..#NID3S

Nikon TOTAL IMAGING SYSTEM DEALER 12 Mega Pixels

Nikon SLR Lenses and Flashes

Call for Available Rebates

AF Flashes	IMP	USA
SB-400		
SB-700		
SB-900		
R1 Wireless Twin Flash		
R1C1 Wireless Twin Flash System		

DX ED-IF Lenses for Digital Only	IMP	USA
10.5/2.8 Fish-Eye		
35/1.8 G AF-S (52ø)		
85/3.5 G ED VR Micro (52ø)		
10-24/3.5-4.5 G AF-S (77ø)		
12-24/4 G AF-S (77ø)		
16-85/3.5-5.6 G AF-S VR (67ø)		
17-55/2.8 G AF-S (77ø)		
18-55/3.5-5.6 G AF-S II (52ø)		
18-55/3.5-5.6 G AF-S VR (52ø)		
18-105/3.5-5.6 G AF-S VR (67ø)		
18-200/3.5-5.6 G AF-S VR II (72ø)		
55-200/4-5.6 G AF-S (67ø)		
55-200/4-5.6 G AF-S VR (67ø)		
55-300/4.5-5.6 G AF-S VR (58ø)		

D-Type AF Lenses	IMP	USA
14/2.8 D ED		
16/2.8 D (39ø) with Hood		
20/2.8 D (62ø)		
24/2.8 D (52ø)		
24/1.4 G AF-S ED (77ø)		
24/3.5 D ED PC-E (77ø)		
28/2.8 D (52ø)		
35/2.0 D (52ø)		
35/1.4 G AF-S ED (67ø)		
45/2.8 D ED PC-E Micro (77ø)		
50/1.8 D (52ø)		
50/1.8 G AF-S (58ø)		
50/1.4 D (52ø)		
50/1.4 G AF-S (58ø)		
60/2.8 D Micro (62ø) (1:1)		
60/2.8 G AF-S ED Micro (62ø)		
85/1.8 D (62ø) with Hood		
85/1.4 D IF (77ø)		
85/1.4 G AF-S (77ø)		
85/2.8 PC-E Micro (77ø)		
105/2.8 G AF-S ED-IF VR Micro (62ø)		
105/2.0 DC D with Hood (72ø)		
180/2.8 D ED-IF (72ø)		
200/4 D ED-IF Micro w/Case (62ø)		

D-Type AF Lenses	IMP	USA
200/2 G AF-S ED-IF VR (52ø)		
300/4.0 D AF-S ED-IF (77ø)		
300/2.8 G AF-S VR (52ø-R)		
400/2.8 G AF-S VR ED (52ø)		
500/4.0 G AF-S VR ED (52ø)		
600/4.0 G AF-S VR ED (52ø)		
14-24/2.8 G AF-S ED-IF		
16-35/4.0 G AF-S ED VR (77ø)		
17-35/2.8 D AF-S ED-IF (77ø)		
24-70/2.8 G AF-S ED-IF (77ø)		
24-85/2.8-4.0 D IF (72ø)		
24-120/4.0 G AF-S ED VR (77ø)		
28-300/3.5-5.6 G AF-S ED VR (77ø)		
70-200/2.8 G AF-S ED-IF VR II (77ø)		
70-300/4.0-5.6 G (62ø)		
70-300/4.5-5.6 G-AFS VR (67ø)		
80-200/2.8 D with Collar (77ø)		
80-400/4.5-5.6 D VR (77ø)		
200-400/4 G AF-S ED VR II (52ø)		
TC-14E II (1.4x) Teleconverter		
TC-17E II (1.7x) Teleconverter		
TC-20E III (2x) Teleconverter		

USA = Imported and Warranted by Nikon USA (AF lenses include 1 year warranty plus 4 years extended service coverage)

IMP = Imported and Warranted by B&H (not qualified for Nikon USA Rebates and Warranties)

Nikon 24-70mm f/2.8 G AF-S ED-IF
Zoom Lens

- Optimized for edge-to-edge sharpness on both the Nikon FX (full-frame) and DX-format image sensors
- Rugged construction, dust and moisture resistance
- Minimum focus 1.2'
- 77mm filter diameter
- Weight 32 oz

Nikon 18-200/3.5-5.6 DX G VR II AF-S ED-IF Digital Lens

- ***Designed exclusively for Digital SLRs***
- 35mm equiv. 27-300mm
- **VR II** Vibration Reduction
- SWM (Silent Wave Motor)
- 3.5-22 f/Stop Range
- Focus 1.6' to Infinity
- 72mm filter diameter
- Weight 19.8 oz

Nikon 70-200/2.8 G AF-S ED-IF VR II
Telephoto-Zoom Lens

- **VR II** Vibration Reduction
- 3.5-22 f/Stop Range
- SWM (Silent Wave Motor)
- Close Focusing to 4.6'
- 77mm filter diameter
- Weight 3.2 lbs

Nikon SB-900 Speedlight i-TTL
Shoe Mount Flash

- Guide No. 131'
- Recycling Time 4.5 Secs
- Bounce & Swivel Head
- Zoom Head (17-200mm)
- Stroboscopic Effect
- AF-Assist Illuminator
- Safety lock on flash shoe
- Weight 14.6 oz

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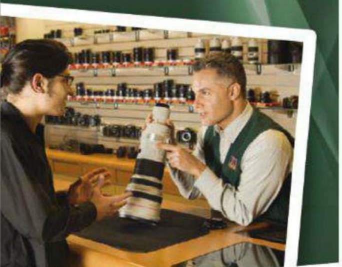

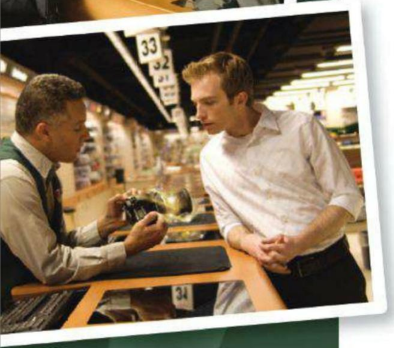

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Di – for both digital & film SLR cameras • **Di-II** – for Digital SLRs Only

C = Canon N = Nikon P = Pentax SM = Sony/Minolta *** Price After Rebate*

		SKU #	Available for	Rebate	Price
Di-II	60/2.0 LD IF Macro (55ø)	#TA602DI*	C, N, SM	**$100**	**$424.00****
Di	90/2.8 Macro (55ø)	#TA9028M*	C, N, P, SM	**$50**	**$449.00****
Di	180/3.5 LD IF Macro (72ø)	#TA18035*	C, N, SM	**$50**	**$689.00****
Di-II	10-24/3.5-4.5 (77ø)	#TA102435*	C, N, P, SM	**$50**	**$449.00****
Di-II	17-50/2.8 XR LD IF Aspherical (67ø)	#TA175028*	C, N, P, SM	**$25**	**$474.00****
Di-II	17-50/2.8 XR VC LD IF Asph. (67ø)	#TA175028*Q	C, N	**$50**	**$599.00****
Di-II	18-200/3.5-6.3 (62ø)	#TA1820035*	C, N, P, SM	**$60**	**$239.00****
Di-II	18-270/3.5-6.3 VC (72º)	#TA1827035*	N	—	**CALL**
Di-II	18-270/3.5-6.3 VC PZD (62ø)	#TA18270*	C, N	—	**$649.00**
Di	28-75/2.8 XR (67ø)	#TA287528*	C, N, P, SM	**$25**	**$474.00****
Di	28-300/3.5-6.3 XR LD (62ø)	#TA2830035XD*	C, N, P, SM	—	**$419.00**
Di	28-300/3.5-6.3 XR VC (62ø)	#TA2830035*	C, N	—	**$629.00**
Di	70-200/2.8 LD IF Macro (77ø)	#TA7020028M*	C, N, P, SM	—	**$769.00**
Di	70-300/4-5.6 VC USD	#TA70300*	C, N, SM	**$50**	**$399.00****
Di	75-300/4.0-5.6 LD (62ø)	#TA753004*	C, N, SM	—	**$164.00**
Di	200-500/5-6.3 LD IF (86Cø)	#TA2005005*	C, N, SM	—	**$949.00**
	1.4x SP AF Pro Teleconverter	#TA14XP*	C, N	—	**$224.00**
	2x SP AF Pro Teleconverter	#TA2XP*	C, N	—	**$254.00**

Tokina AF LENSES

DX – for Digital SLRs Only **FX** – Designed for full frame DSLRs

	** Also Available for Sony Alpha DSLR	Canon EOS	Nikon AF	Price
DX	35/2.8 Pro Macro (55ø)	#TO3528PDXC	#TO3528PDXN	**$299.00**
FX	100/2.8 Pro D Macro (52ø)	#TO10028PCAF	#TO10028PNAF	**$449.00**
DX	10-17/3.5-4.5 ATX Fisheye	#TO101735CAF	#TO101735NAF	**$599.95**
DX	11-16/2.8 Pro (77ø) **	#TO111628PDXC	#TO111628PDXN	**$659.95**
DX	12-24/4.0 Pro II (77ø)	#TO12244DXC	#TO12244DXN	**$549.95**
FX	16-28/2.8 Pro (77ø)	#TO162828FXC	#TO162828FXN	**$849.00**

FLASHES

Metz

28 AF-3 TTL Digital Shoe Mount Flash	**$108.00**
28 CS-2 Digital Slave Shoe Mount Flash	**$126.00**
50 AF-1 TTL Shoe Mount Flash f/Canon or Nikon	**$230.00**
54 MZ-4 TTL Standard Shoe Mount Flash	**$364.99**
58 AF-2 TTL Shoe Mount Flash f/Canon or Nikon	**$400.00**
45 CL-4 TTL Handle Mount Flash Kit**	**$699.95**
76 MZ-5 TTL Handle Mount Flash**	**$1,024.99**

** with battery and charger

QUANTUM

Q-flash TRIO	**$875.00**
Q-flash T5D-R	**$706.00**
Q-flash T5D-R with Turbo Battery	**$1,114.95**
Q-flash T5D-R with Turbo Compact Battery	**$1,125.00**

Batteries

Battery 1 Compact	**$118.00**		
Battery 1	**$224.00**	Turbo SC	**$466.00**
Turbo Blade	**$466.00**	Turbo 3	**$624.00**

SUNPAK

E-Flash Flat Panel Kit #SUFP38	**$58.95**
018ST fits most Digital Cameras	**$29.95**
RD-2000 Shoe Mount Flash	**$64.95**
PZ-4000 AF TTL Shoe Mount f/Canon, Nikon	**$69.95**
PZ-40x II AF TTL Shoe Mount	**$69.95**
PZ-42x AF TTL Shoe Mount for Canon, Nikon	**$139.99**
622 Super Pro TTL Handle Mount Flash	**$196.95**
622 Super Kit with Wide Angle Head	**$199.95**

Vivitar

285HV Professional Auto	**$89.95**
Pearstone SB-4 AC Adapter for 285HV #PESB4	**$14.95**

SIGMA AF LENSES & FLASHES

DC – for Digital SLRs Only • **DG** – Optimized for Digital SLRs

	H – HSM Model with Canon, Nikon, Sigma **R** – Rear Slip-in Gelatin Filter Slot	Canon	Nikon	Pentax	Sigma	Sony/Minolta	Price
DC	4.5mm f/2.8 EX Circular Fisheye HSM R	#SI4528EXDCC	#SI4528EXDCN	#SI4528EXDCP	#SI4528EXDCSI	#SI4528EXDSO	**$899.00**
DG	8/3.5 EX Circular Fish-Eye R	#SI835CA	#SI835NA	—	#SI835SI	—	**$899.00**
DC	10mm f/2.8 EX Fisheye HSM R	#SI1028EXDCC	#SI1028EXDCN	#SI1028EXDCP	#SI1028EXDCSI	#SI1028EXDCSO	**$649.00**
DG	15/2.8 EX Diagonal Fish-Eye R	#SI1528DGCAF	#SI1528DGNAF	#SI1528DGPAF	#SI1528DGSA	#SI1528DGMAF	**$609.00**
DG	20/1.8 EX DF RF Aspherical (82ø)	#SI2018CAF	#SI2018NAF	#SI2018PAF	#SI2018SA	#SI2018MAF	**$629.00**
DG	24/1.8 EX DF Aspherical Macro (77ø)	#SI2418MCAF	#SI2418MNAF	#SI2418MPAF	#SI2418MSA	#SI2418MMAF	**$549.00**
DG	28/1.8 EX DF Aspherical Macro (77ø)	#SI2818MCAF	#SI2818MNAF	#SI2818MPAF	#SI2818MSA	#SI2818MMAF	**$449.00**
DC	30mm f/1.4 EX HSM (62ø)	#SI3014DCCAF	#SI3014DCNAF	#SI3014DCPAF	#SI3014DCSA	#SI3014DCMAF	**$489.00**
DG	50mm f/1.4 EX (77ø) H	#SI5014C	#SI5014N	#SI5014PE	#SI5014SI	#SI5014SOM	**$499.00**
DG	50/2.8 EX Macro (55ø)	#SI5028MDGCAF	#SI5028MDGNAF	#SI5028MDGPAF	#SI5028MDGSA	#SI5028MDGMAF	**$369.00**
DG	70/2.8 EX Macro (62ø)	#SI7028MDGCA	#SI7028MDGNA	#SI7028MDGPA	#SI7028MDGSA	#SI7028MDGSAQ	**$499.00**
DG	85/1.4 EX HSM (77ø)	#SI8514C	#SI8514N	#SI8514P	#SI8514SI	#SI8514S	**$969.00**
DG	105/2.8 EX Macro OS (62ø)	#SI10528MDGCE	#SI10528MDGNQ	—	—	#SI10528MDGSM	**$969.00**
DG	150/2.8 EX APO Macro OS HSM (72ø)	#SI15028AMOC	#SI15028AMON	#SI15028AMOP	#SI15028AMOSI	#SI15028AMOS	**$1,099.00**
DG	300/2.8 APO EX HSM	#SI30028DGCAF	#SI30028DGNAF	#SI30028DGPAF	#SI30028DGSA	#SI30028DGMAF	**$3,399.00**
DC	8-16/4.5-5.6 HSM	#SI8164556CA	#SI8164556NI	#SI8164556PE	—	#SI8164556SO	**$699.00**
DC	10-20/4-5.6 EX HSM (77ø)	#SI102045DCAF	#SI102045DNAF	#SI102045DPAF	#SI102045DSA	#SI102045DMAF	**$479.00**
DC	10-20/3.5 EX HSM (82ø)	#SI102035C	#SI102035SN	#SI102035P	#SI102035SG	#SI102035S	**$649.00**
DG	12-24/4.5-5.6 EX Aspherical HSM	#SI122445C	#SI122445N	#SI122445P	#SI122445SI	#SI122445S	**$949.00**
DC	17-50/2.8 EX OS (77ø)	#SI175028CA	#SI175028NI	#SI175028PE	—	#SI175028SO	**$669.00**
DC	17-70/2.8-4.0 OS Macro HSM (72ø)	#SI177028DCC	#SI177028DCNQ	#SI177028DCP	#SI177028DCSI	#SI177028DCSM	**$469.00**
DC	18-50/2.8-4.5 OS (67ø)	#SI185028DOC	#SI185028DON	#SI185028DOP	#SI185028DOSG	#SI185028DOS	**$199.00**
DC	18-125/3.8-5.6 OS (Optical Stabilizer) (67ø) H	#SI18125350SC	#SI18125350SN	#SI18125350SP	#SI18125350SI	#SI18125350SS	**$339.00**
DC	18-200/3.5-6.3 IF Aspherical (62ø)	#SI1820035CAF	#SI182003563N	#SI1820035PAF	#SI1820035SA	#SI1820035MAF	**$279.00**
DC	18-200/3.5-6.3 OS (Optical Stabilizer) (72ø)	#SI1820035C	#SI1820035N	—	#SI1820035S	—	**$399.00**
DC	18-250/3.5-6.3 OS HSM (72ø)	#SI1825035C	#SI1825035N	#SI1825035CP	#SI1825035S	#SI1825035CSN	**$479.00**
DG	24-70/2.8 EX IF HSM (82ø)	#SI247028C	#SI247028NF	#SI247028PS	#SI247028S	#SI247028SM	**$899.00**
DC	50-200/4-5.6 OS HSM (55ø)	#SI5020045DOC	#SI5020045DON	#SI5020045DOP	#SI5020045DSG	#SI5020045DOS	**$159.00**
DG	50-500/4.5-6.3 APO OS HSM (95ø)	#SI505004563C	#SI505004563N	#SI505004563P	#SI505004563SA	#SI505004563SM	**$1,659.00**
DG	70-200/2.8 EX Macro II HSM (77ø)	#SI7020028C	#SI7020028N	#SI7020028PSA	#SI7020028S	#SI7020028SO	**$949.00**
DG	70-200/2.8 EX OS HSM (77ø)	#SI7020028CQ	#SI7020028NI	#SI7020028P	—	#SI7020028SOQ	**$1,399.00**
DG	70-300/4-5.6 DL Macro Super II (58ø)	#SI703004SCAF	#SI70300456N	#SI703004PAF	#SI703004SA	#SI703004MAF	**$169.00**
DG	70-300/4-5.6 APO Macro Super II (58ø)	#SI703004DGCA	#SI70300456AN	#SI703004DGPA	#SI703004DGSA	#SI703004DGMA	**$239.00**
DG	70-300/4-5.6 OS (62ø)	#SI7030045C	#SI7030045N	#SI7030045P	#SI7030045S	#SI7030045SM	**$359.00**
DG	120-300/2.8 EX APO OS HSM (105ø)	#SI12030028C	#SI12030028N	#SI12030028P	#SSI12030028SA	#SI12030028S	**$3,199.00**
DG	150-500/5-6.3 APO OS HSM	#SI150500C	#SI150500N	#SI150500P	#SI150500S	#SI150500M	**$1,069.00**
DG	1.4x EX APO Tele-Converter	#SI1.4XDGCAF	#SI1.4XDGNAF	#SI1.4XDGPAF	#SI1.4XDGSA	#SI1.4XDGMAF	**$249.00**
DG	2x EX APO Tele-Converter	#SI2XDGCAF	#SI2XDGNAF	#SI2XDGPAF	#SI2XDGSA	#SI2XDGMAF	**$299.00**
DG	EF-610 ST	#SIEF610STC	#SIEF610STN	#SIEF610STP	#SIEF610STSI	#SIEF610STS	**$165.00**
DG	EF-610 Super Flash	#SIEF610C	#SIEF610N	#SIEF610P	#SIEF610SI	#SIEF610S	**$255.00**
DG	EM-140 TTL Ringlight	#SIEM140DGC	#SIEM140DGN	#SIEM140DGP	#SIEM140DGS	#SIEM140DGM	**$379.00**

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- Mag. ratio of 1:3.9
- 72mm filter diameter
- Weight 21.6 oz

SIGMA

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	52mm	58mm	67mm	72mm	77mm
UV, Skylight (1B)	$13.35	$19.95	$32.85	$34.35	$49.35
UV, Skylight (1B) HMC	$20.85	$23.85	$35.85	$43.35	$52.35
UV, Skylight (1B) Super HMC	$35.85	$44.85	$55.35	$65.85	$74.85
Linear Polarizer	$32.85	$35.85	$38.85	$44.85	$55.35
Circular Polarizer	$38.85	$43.35	$62.85	$74.85	$88.35
Circular Polarizer HMC	$77.85	$88.35	$103.35	$146.85	$179.85
"Moose" Warm Circular Polarizer	$55.35	$64.35	$92.85	$115.35	$137.85
K2 Yel, X0 Yel/Grn, Grn X1, Or G, Red 25A HMC	$25.35	$28.35	$41.85	$49.35	$61.35
Close Up Set (+1, +2, +4)	$50.85	$64.35	$77.85	$95.85	$104.85
Close-Up Set HMC (+1, +2, +4)	$65.85	$74.85	$98.85	—	—
Intensifier – Blue, Green Field, Enhancement (Red)	$44.85	$55.35	$70.35	$86.85	$104.85
Neutral Density 2x, 4x, 8x HMC	$25.35	$28.35	$41.85	$49.35	$61.35
Star 6, Star 8	$25.35	$28.35	$43.25	$49.35	$58.35

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Skylight (1B), UV	$39.99	$41.99	$62.99	$77.99	$89.99
Skylight (1B), UV SH-PMC	$72.99	$78.99	$103.99	$131.99	$157.99
Circular Polarizer, Slim Circular Polarizer	$115.99	$121.99	$151.99	$180.99	$195.99
Circular Polarizer SH-PMC, Slim Circ. Pol. SH-PMC	$161.99	$171.99	$214.99	$242.99	$275.99
#5, #8, #11, #13, #15, #22, 81A, 81B, 81C	$49.99	$51.99	$78.99	$96.99	$108.99
Digital Filter	$176.99	$180.99	$222.99	$261.99	$301.99

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UV	$21.00	$23.00	$33.50	$42.00	$47.50
UV Multi-Coated	$38.50	$38.50	$52.00	$64.50	$88.00
Circular Polarizer	$63.00	$65.00	$81.50	$93.50	$105.00
Circular Polarizer Multi-Coated	$90.00	$93.50	$117.00	$134.50	$160.50
81A, B, KR3, 6, 12, 15	$26.50	$26.50	$36.00	$42.00	$49.00
KB1.5, 3, 6, 12, 15, 20	$28.50	$28.50	$35.00	$40.50	$47.50
#021, 023, 041, 060, 061, 090	$24.50	$24.50	$36.00	$42.00	$49.00
Graduated (N.D. & Colors)	$46.50	$47.50	$58.50	$68.00	$82.50
ND .9, 1.8, 3.0, 4.0, 6.0	$42.00	$42.00	$67.50	$84.00	$94.50
Close-Up Lenses 0.25 – 5.0	$24.50	$24.50	$36.00	$42.00	$49.00

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Grad ND 0.6	$74.95	$84.95	$109.95	$119.95	$139.95
Circular Polarizer	$109.95	$129.95	$159.95	$199.95	$219.95
Ultra Clear	$49.95	$59.95	$69.95	$74.95	$79.95
Haze 86	$54.95	$64.95	$74.95	$84.95	$99.95
ND 1.2	$64.95	$74.95	$99.95	$109.95	$129.95
ND 0.6	$64.95	$74.95	$99.95	$109.95	$129.95
Soft FX3	$74.95	$84.95	$109.95	$119.95	$139.95
Star 4 pt 2	$64.95	$74.95	$99.95	$109.95	$129.95

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CH 400 135-24	**1.99**

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400H 120 Roll	**5.09**

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400 120 Roll	**4.89**
400 220 PP (5)	**49.95**
400VC 135-36	**5.99**
800 135-36	**9.50**
800 120 Roll	**6.49**

Ektar

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100 120 Roll	**3.69**

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Velvia RVP

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100F 120 Roll	**4.59**

Provia

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RDP 100F 120 Roll	**3.79**
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RXP III 400X 120 Roll	**6.29**

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FP4+ 125 120 Roll	**4.25**
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HP5+ 400 120 Roll	**3.89**

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400 120 Roll	**4.49**
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3200 120 Roll	**5.29**

XP-2 Super

400 135-36	**6.09**
400 120 Roll	**5.00**

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SFX 3200 120 Roll	**7.50**

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Plus-X 125 135-36	**5.49**
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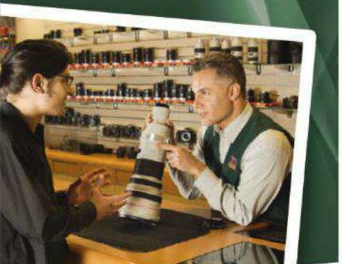

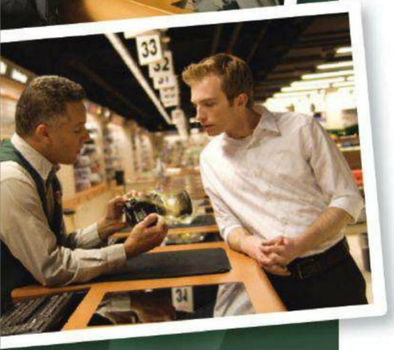

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Lens Covers

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- Also available in white for Canon lenses

Pro

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LensCoat® RainCoat provides protection for your camera and lens from the elements like rain, snow, salt spray, dirt, sand and dust while allowing you easy access to the camera and lens controls. The RainCoat comes in two sizes **Pro** (for DSLRs with lenses from 300mm f2.8 - 800mm) and **Standard** (for DSLRs with small lenses up to 400mm f5.6). The RainCoat is constructed from a lightweight waterproof, breathable poly tricot material with the Realtree® Max4 camouflage pattern. The seams are tape sealed for maximum protection.

The RainCoat goes on quickly and easily. Its versatility through the use of the cinch straps allows you to adjust the length of the cover and to keep it snug around your lens. It has a fold out arm sleeve from its integrated pocket for access to the camera controls. You can also access the camera through the rear opening and the lens through the hook & loop bottom closure.

Standard

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- No slip rubber around hood section for solid grip on hood (no bungee cord)
- Mesh storage and transportation pouch included
- Compatible with LensCoat® lens covers, Hoodie™ lens caps and camera BodyGuards™
- Care: allow to dry before storing. Clean with water only. Do not machine wash or dry. Do not dry clean.
- Made in the USA

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Standard model - 20.5" 6.4oz

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Large .... 4.25" to 4.75"
X-Large..... 4.75" to 5.25"
XX-Large ..... 5.5" to 6.25"
XXX-Large ...... 6.25" to 7"
XXXX-Large .... 7" to 7.75"

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RAW VS. JPEG

(Cont'd from page 81)

In fact, that's a good plan that leaves you the most options down the road, but it's not necessarily the best course of action for most nature photographers. Before you just go and set up the camera to record two versions of every image, it's a good idea to fully understand what you're getting and the best ways to use each file so you can use your storage capacity and your computer time most efficiently.

We've mentioned some of the key benefits of RAW files. Overall, you get a finer degree of control over the image than you can with JPEGs. You can adjust exposure to some degree, although it's a common misconception to think that you can make large adjustments to the exposure without losing detail. RAW files don't magically give you more latitude. RAW files, however, give you much more control over the color balance and contrast in the image. So what's the catch? The downside is that every RAW file needs to be processed, which can be time-consuming. In this regard, shooting RAW vs. JPEG is analogous to shooting black-and-while vs. color transparency film. A color transparency, once the exposure is made, is essentially done. It gets processed in a prescribed blend of chemicals, and it's done. Black-and-white film, on the other hand, barely begins its journey to a final print when the original exposure is made. And just like black-and-white film, you can exercise a lot of control or a minimal amount, but you have to do some work to get from a latent image to a useable one. That's the same as RAW files.

So a clear advantage of JPEG files, even today, is that you spend less time processing at the computer, which frees you up to spend more time shooting. JPEG files are shot and processed in an instant and once you import them into the computer, they can be easily emailed to friends or posted to online galleries. In short, the format lends itself to efficiency, if not control.

Earlier in this article, we wrote that the RAW + JPEG is probably the best way to cover all of your bets. It gives you the best of all worlds, although there are still some pitfalls (see the sidebar "Why Not Just Shoot RAW + JPEG All The Time?"). If you have both a RAW and a JPEG of the same image, you can use each file for its particular strengths. **OP**

SOLUTIONS

(Cont'd from page 94)

is being made across the sensor over a period of time. It's a very short period of time, but it's definitely not all at once.

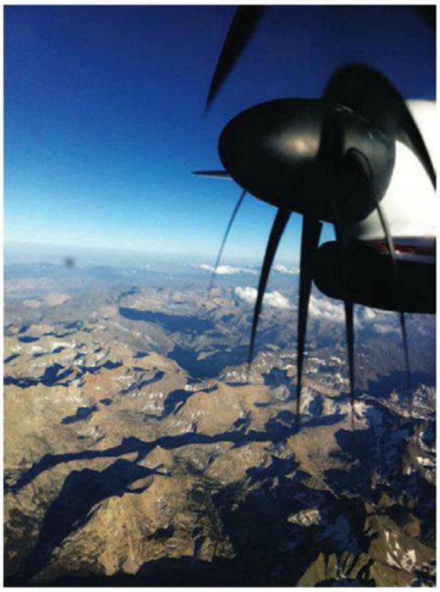
As a nature photographer, this is a phenomenon that you're unlikely to run into frequently. You won't see it with landscapes or even fast-moving wildlife, but it does come into play. When you're shooting HD video with your DSLR, you're likely to see some of the artifacts caused by rolling shutter. The most common issues are the Jello effect, skewing images, smeared images and partial exposure.

The Jello effect is seen in video when the whole frame seems to wobble slightly. It's caused by the camera vibrating while the video is being shot. The Jello effect is most strongly seen in scenes taken with long telephoto lenses, which tend to magnify any camera vibration.

The skew effect is more visible in still images than motion. It's seen when the subject moves quickly from one side of the frame to the other. As the line scan works its way across the frame, a fast-moving subject can be recorded over an extended period, and therefore over more lines, if it's moving in the same direction as the scan and it's moving fast enough. On the other hand, if the subject is moving against the line scan, the opposite skew happens because the subject is being recorded for a shorter period and over fewer lines than it should be.

Image smear is usually illustrated by such subjects as the moving propeller that we mentioned at the beginning of this article. The distortion renders the propeller blades on one side of the frame thinly, and on the other side of the frame, they're rendered fat. Also, a blade can appear to be bent at an extreme if the line scan and the propeller speed are synced up correctly. We've heard some photographers say that they've seen a similar effect when photographing hummingbirds in flight, although it's not a common effect.

One sees partial-exposure issues in still photography only. This happens because the flash duration isn't long enough for the line scan. You see an analogous effect if you shoot a scene at a shutter speed that's faster than your camera's X sync. Unless your flash fires for a very short period, you won't see partial-exposure problems due to rolling shutter. On the other hand, if you shoot with a shutter speed that's faster than your X sync, you'll almost always have partial-exposure issues.



***ABOVE:* This photo was taken with a camera phone. You can see the distortion of the propeller blades quite clearly. In fact, one blade doesn't even seem to be attached to the hub.**

How do you defeat rolling-shutter issues? Some are easy to avoid, while others are just a consequence of digital photography. Smear and skew are difficult to mitigate because the effects are caused by the relative speed of the line scan and the subject, neither of which can be controlled. The Jello effect is easier to deal with. A sturdy shooting platform is the first step in getting wobble-free images. Avoid shooting from inside a car where the engine vibrations can contribute to wobble. Also, because extreme telephoto lenses exacerbate the effect, be sure that anytime you're using a long lens, you also have a very stable platform. While the Jello effect is most visible in video, it does show up in still frames under the right conditions.

The next time you're on a propeller plane, try shooting a picture out the window that has the prop in it. It's an interesting effect, and while the images aren't likely to make the cover of *OP*, you can have some fun showing the shots to friends. **OP**

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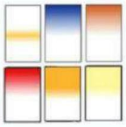

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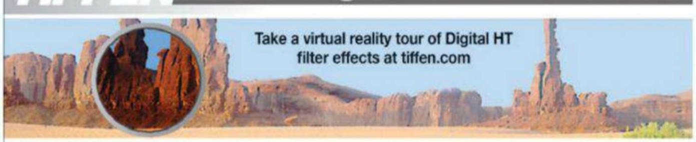

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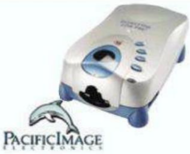

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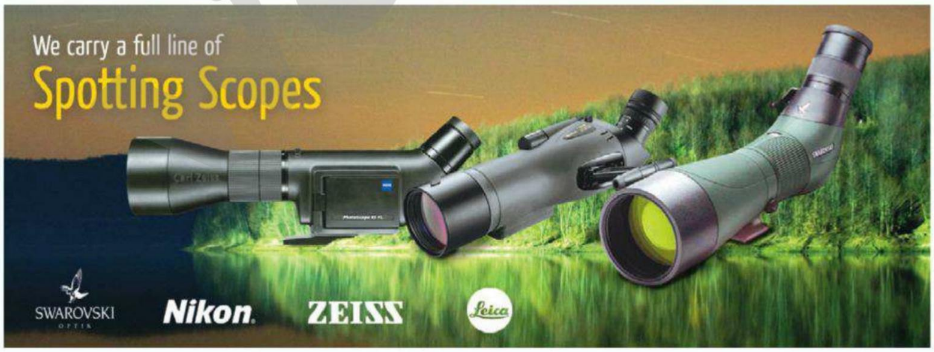

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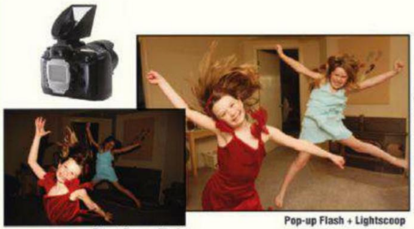
Even light
with your pop-up flash



Direct Pop-up Flash

Pop-up Flash + Lightscoop

Photos by Lightscoop User John Burgess

Bounce the pop-up flash with Professor Kobré's Lightscoop® to produce natural lighting with these DSLR cameras:

Canon 10D, 20D, 30D, 40D, 50D, 60D, 70D **Canon** Rebel XTi, T2i, 400/450, 500/550, XT, XS, Xsi, 350, 1000D **Nikon** D40, D40x, D50, D60, D70, D70s, D80, D90, D100, D200, D300, D700, D3000, D3100, D5000; **Olympus** E3, E420, , 620, E520; **Pentax** K-7, K-X, K10D, K20D, K100D, K200D; **Sigma** SD14 series; **Fuji** FinePix Pro S series; **Sony** a200, a250, a300, a330, a380, a500, a550, a700

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David Pogue, *New York Times*
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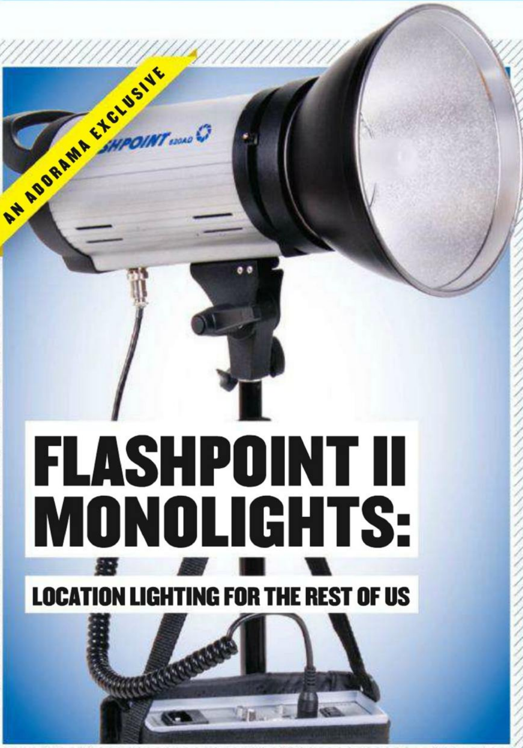

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Adorama's Flashpoint II monolights make sophisticated location lighting affordable—powering up from Adorama's new, dedicated battery pack. Unlike conventional monolights, you don't need on-site electricity to use them. And when you get back to the studio, just plug them in for AC operation. There's no need for separate lighting kits!

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by Flashpoint - Exclusively from adorama.com

ALL THE FEATURES OF HIGH-PRICED CARBON FIBER TRIPODS WITHOUT THE HIGH PRICE

Carbon fiber is much stronger than aluminum, yet it is about 30% lighter in weight. It absorbs shock and does not transmit vibrations- ensuring sharper images. Opens and closes with ease, and can be used for ground-level photography. Leg ends are rubber tipped and have retractable spikes for steady shooting everywhere.

Available in a variety of sizes, with flip or twist lock, and as a monopod
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FLASHPOINT

FLASHPOINT Accessories

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Lighting Outfit Case with Wheels

Fully padded inside

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Fits most lighting kits with light stands up to 36" in length.

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Removeble dividers

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6 internal dividers

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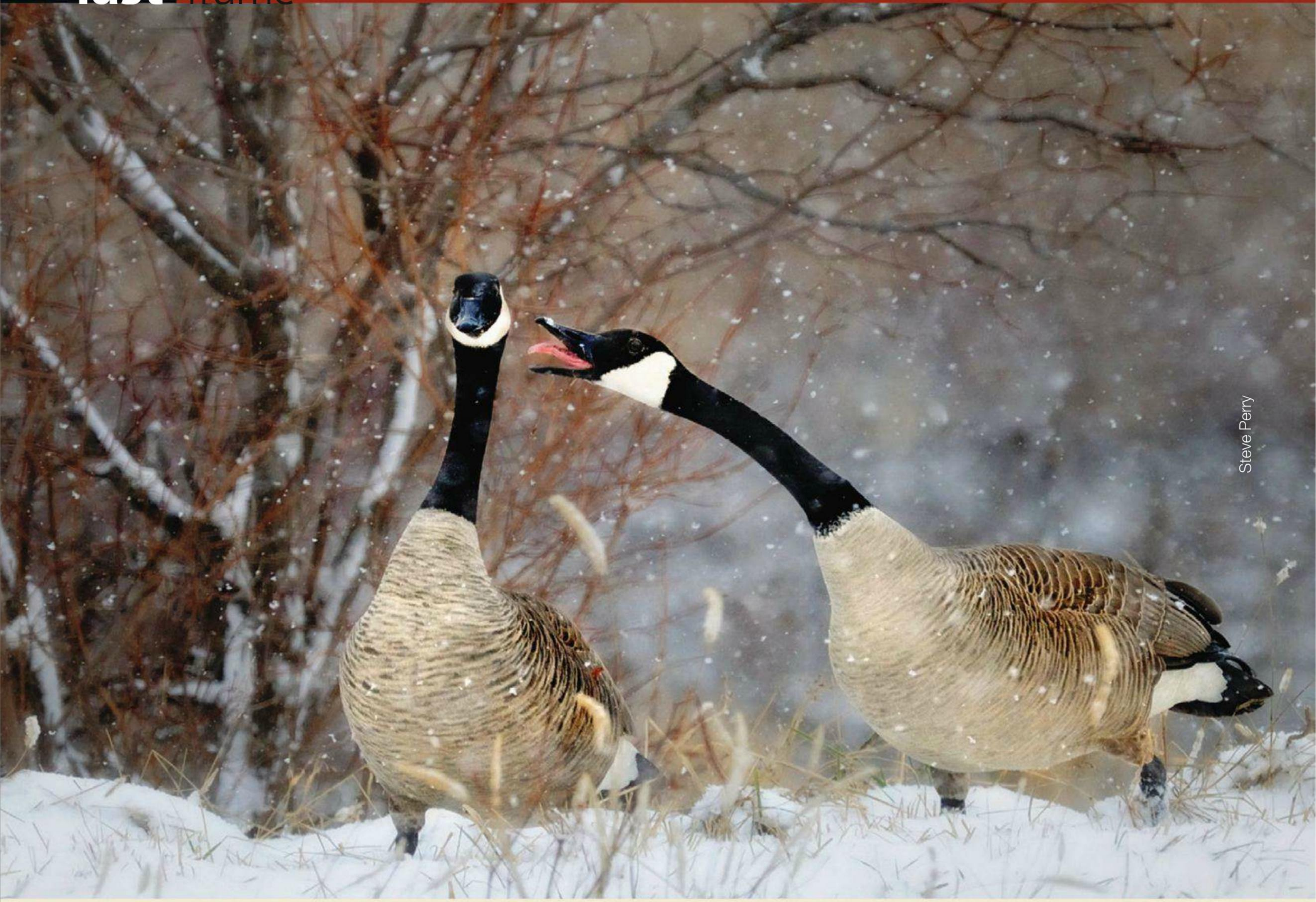
Steve Perry

Geese For The Gander

On a search for wildlife one winter day, fine-art nature photographer Steve Perry decided to take a ride out to the Magee Marsh Wildlife Area along the coast of Lake Erie in Ohio. At first he was disappointed to find that the only local animals were a few common Canada geese that happened to be milling about, but he soon changed his mind. "Since I didn't want to come back empty-handed," he explains, "I pointed the camera and the 500mm at these two. I snapped a few shots while they just stood there, when all of a sudden the one on the right let the one on the left just have it. Frankly, I'm not sure what instigated the whole thing, but my bet is the guy on the left asked the wife for another new camera, at least that's what it looks like from my personal experience! At any rate, it just goes to show you, the most important part of any kind of nature photography is simply making time to get out and be there. You never know what you're going to get!"
To see more of Perry's work, visit www.backcountrygallery.com.

Nikon D3X, AF-S Nikkor 500mm ƒ/4G ED VR II

60
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The Sony mount does not include VC as the body of Sony DSLRs includes image stabilization functionality. Therefore, the Sony mount lens is called SP 70–300mm F/4–5.6 Di USD and does not include the VC description.

new model A005

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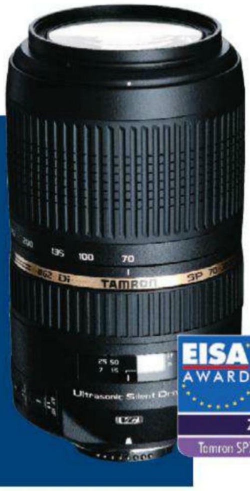

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